Appendix F – Wetland Permit Application

- Volume 1 – Preliminary Permit Application (February 2015): Joint Application Form for Activities Affecting Water Resources in Minnesota (without appendices)
- Volume 2 – Replacement Plan (June 29, 2015); Joint Application Form for Activities Affecting Water Resources in Minnesota (without appendices)
- Supplemental Information for TH 53 Relocation Wetland Permit Application – Volume 2 (August 24, 2015)
- Wetland Correspondence since Draft EIS

TH 53 Relocation Project

Wetland Permit Application

MnDOT District 1
State Project No.: SP 6918-80

Virginia, Minnesota

SEH No. MNT01 130641

February 2015

SEH

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Joint Application Form for Activities Affecting Water Resources in Minnesota

This joint application form is the accepted means for initiating review of proposals that may affect a water resource (wetland, tributary, lake, etc.) in the State of Minnesota under state and federal regulatory programs. Applicants for Minnesota Department of Natural Resources (DNR) Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. Applicants can use the information entered into MPARS to substitute for completing parts of this joint application form (see the paragraph on MPARS at the end of the joint application form instructions for additional information). This form is only applicable to the water resource aspects of proposed projects under state and federal regulatory programs; other local applications and approvals may be required. Depending on the nature of the project and the location and type of water resources impacted, multiple authorizations may be required as different regulatory programs have different types of jurisdiction over different types of resources.

Regulatory Review Structure

Federal

The St. Paul District of the U.S. Army Corps of Engineers (Corps) is the federal agency that regulates discharges of dredged or fill material into waters of the United States (wetlands, tributaries, lakes, etc.) under Section 404 of the Clean Water Act (CWA) and regulates work in navigable waters under Section 10 of the Rivers and Harbors Act. Applications are assigned to Corps project managers who are responsible for implementing the Corps regulatory program within a particular geographic area.

State

There are three state regulatory programs that regulate activities affecting water resources. The Wetland Conservation Act (WCA) regulates most activities affecting wetlands. It is administered by local government units (LGUs) which can be counties, townships, cities, watershed districts, watershed management organizations or state agencies (on state-owned land). The Minnesota DNR Division of Ecological and Water Resources issues permits for work in specially-designated public waters via the Public Waters Work Permit Program (DNR Public Waters Permits). The Minnesota Pollution Control Agency (MPCA) under Section 401 of the Clean Water Act certifies that discharges of dredged or fill material authorized by a federal permit or license comply with state water quality standards. One or more of these regulatory programs may be applicable to any one project.

Required Information

Prior to submitting an application, applicants are **strongly encouraged** to seek input from the Corps Project Manager and LGU staff to identify regulatory issues and required application materials for their proposed project. Project proponents can request a pre-application consultation with the Corps and LGU to discuss their proposed project by providing the information required in Sections 1 through 5 of this joint application form to facilitate a meaningful discussion about their project. Many LGUs provide a venue (such as regularly scheduled technical evaluation panel meetings) for potential applicants to discuss their projects with multiple agencies prior to submitting an application. Contact information is provided below.

The following bullets outline the information generally required for several common types of determinations/authorizations.

- For delineation approvals and/or jurisdictional determinations, submit Parts 1, 2 and 5, and Attachment A.
- For activities involving CWA/WCA exemptions, WCA no-loss determinations, and activities not requiring mitigation, submit Parts 1 through 5, and Attachment B.
- For activities requiring compensatory mitigation/replacement plan, submit Parts 1 thru 5, and Attachments C and D.
- For local road authority activities that qualify for the state's local road wetland replacement program, submit Parts 1 through 5, and Attachments C, D (if applicable), and E to both the Corps and the LGU.

Submission Instructions

Send the completed joint application form and all required attachments to:

U.S Army Corps of Engineers. Applications may be sent directly to the appropriate Corps Office. For a current listing of areas of responsibilities and contact information, visit the St. Paul District's website at: http://www.mvp.usace.army.mil/Missions/Regulatory.aspx and select "Minnesota" from the contact Information box. Alternatively, applications may be sent directly to the St. Paul District Headquarters and the Corps will forward them to the appropriate field office.

Section 401 Water Quality Certification: Applicants do not need to submit the joint application form to the MPCA unless specifically requested. The MPCA will request a copy of the completed joint application form directly from an applicant when they determine an individual 401 water quality certification is required for a proposed project.

Wetland Conservation Act Local Government Unit: Send to the appropriate Local Government Unit. If necessary, contact your county Soil and Water Conservation District (SWCD) office or visit the Board of Water and Soil Resources (BWSR) web site (www.bwsr.state.mn.us) to determine the appropriate LGU.

DNR Public Waters Permitting: In 2014 the DNR will begin using the Minnesota DNR Permitting and Reporting System (MPARS) for submission of Public Waters permit applications (https://webapps11.dnr.state.mn.us/mpars/public/authentication/login). Applicants for Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. To avoid duplication and to streamline the application process among the various resource agencies, applicants can use the information entered into MPARS to substitute for completing parts of this joint application form. The MPARS print/save function will provide the applicant with a copy of the Public Waters permit application which, at a minimum, will satisfy Parts one and two of this joint application. For certain types of activities, the MPARS application may also provide all of the necessary information required under Parts three and four of the joint application. However, it is the responsibility of the Applicant to make sure that the joint application contains all of the required information, including identification of all aquatic resources impacted by the project (see Part four of the joint application). After confirming that the MPARS application contains all of the required information in Parts one and two the Applicant may attach a copy to the joint application and fill in any missing information in the remainder of the joint application.

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: MnDOT District 1,
Robert Ege, District Traffic Engineer
Mailing Address: 1123 Mesaba Ave, Duluth, MN 55811
Phone: 218-725-2788
E-mail Address: Robert.Ege@state.mn.us

Authorized Contact (do not complete if same as above): MnDOT District 1,
Michele (Shelly) Micke, Environmental Coordinator
Mailing Address: 1123 Mesaba Ave, Duluth, MN 55811
Phone: 218-725-2758
E-mail Address: Michele.Micke@state.mn.us

Authorized Contact: Allyz Kramer, SEH Sr. Biologist | Project Manager
Mailing Address: 418 W Superior St, Suite 200, Duluth MN 55802
Phone: 218-279-3011
E-mail Address: akramer@sehinc.com

PART TWO: Site Location Information

County: St. Louis **City/Township: City of Virginia**
Parcel ID and/or Address: Approximate 1.5 mile corridor of TH 53 from Cuyuna Dr to 2nd Ave W in Virginia
Legal Description (Section, Township, Range): Portions of Sections 8, 9, 16, 17, 20, 21; T58N; R17W
Lat/Long (decimal degrees): 47.5026, -92.5177
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 8000 ft

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

See attached narrative (purpose and need in Section 2.3)

PART FOUR: PRELIMINARY Aquatic Resource Impact[1] Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]
13	Wetland	Fill	P	1.04	N/A	F(W)M / Shrub-Carr / Seasonally Flooded Basin	St. Louis, Watershed #3, BSA #1
16	Wetland	Fill	P	1.09	N/A	F(W)M / Shrub-Carr	"
22	Wetland	Fill	P	0.06	N/A	Shallow Marsh	"
23	Wetland	Fill	P	0.45	N/A	Sedge Meadow / Shrub-Carr	"
24	Wetland	Fill	P	1.71	N/A	Shallow Marsh / Sedge Meadow	"
25	Wetland	Fill	P	0.11	N/A	F(W)M	"
26	Wetland	Fill	P	0.70	N/A	F(W)M	"
28	Wetland	Fill	P	0.02	N/A	F(W)M	"
29	Wetland	Fill	P	0.05	N/A	Sedge Meadow	"
30	Wetland	Fill	P	0.19	N/A	Seasonally Flooded Basin – Wet Ditch	"
31	Wetland	Fill	P	0.06	N/A	Shallow Marsh	"
32	Wetland	Fill	P	0.29	N/A	Shallow Marsh / Sedge Meadow	"
43	Wetland	Fill	P	0.18	N/A	F(W)M – Wet Ditch	"
44	Wetland	Fill	P	0.09	N/A	F(W)M	"

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

N/A

PART FIVE: Applicant Signature

[1] The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: Robert Eye Date: 2/2/15

I hereby authorize Allyz Kramer, SEH to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☐ **Wetland Type Confirmation**

☐ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☒ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota*
(2013). http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

Attachment B
Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part ***if*** you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR ***if*** you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

We anticipate several wetlands are isolated and not under CWA jurisdiction (see Section 5.4.2 of the attached narrative). A request for an approved jurisdictional determination will be submitted under separate cover.

We anticipate several wetlands have developed in roadside ditches cut in upland, and are out of scope of the WCA (see Sections 5.4.2 and 5.5.1.2 of the attached narrative).

Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

See Sections 5.4.2 and 5.5.1.2 of the attached narrative. A request for an approved jurisdictional determination with additional supporting information will be submitted under separate cover.

Attachment C
Avoidance and Minimization

Project Purpose, Need, and Requirements. Clearly state the purpose of your project and need for your project. Also include a description of any specific requirements of the project as they relate to project location, project footprint, water management, and any other applicable requirements. Attach an overhead plan sheet showing all relevant features of the project (buildings, roads, etc.), aquatic resource features (impact areas noted) and construction details (grading plans, storm water management plans, etc.), referencing these as necessary:

See Section 2.3 of attached narrative

Avoidance. Both the CWA and the WCA require that impacts to aquatic resources be avoided if practicable alternatives exist. Clearly describe all on-site measures considered to avoid impacts to aquatic resources and discuss at least two project alternatives that avoid all impacts to aquatic resources on the site. These alternatives may include alternative site plans, alternate sites, and/or not doing the project. Alternatives should be feasible and prudent (see MN Rules 8420.0520 Subp. 2 C). Applicants are encouraged to attach drawings and plans to support their analysis:

See Section 5.4.1 of attached narrative

Minimization. Both the CWA and the WCA require that all unavoidable impacts to aquatic resources be minimized to the greatest extent practicable. Discuss all features of the proposed project that have been modified to minimize the impacts to water resources (see MN Rules 8420.0520 Subp. 4):

See Section 5.4.1 of attached narrative

Off-Site Alternatives. An off-site alternatives analysis is not required for all permit applications. If you know that your proposal will require an individual permit (standard permit or letter of permission) from the U.S. Army Corps of Engineers, you may be required to provide an off-site alternatives analysis. The alternatives analysis is not required for a complete application but must be provided during the review process in order for the Corps to complete the evaluation of your application and reach a final decision. Applicants with questions about when an off-site alternatives analysis is required should contact their Corps Project Manager.

Alternative alignments of the project are discussed in Section 3.2 of the attached narrative

Attachment D
Replacement/Compensatory Mitigation

Complete this part ***if*** your application involves wetland replacement/compensatory mitigation not associated with the local road wetland replacement program. Applicants should consult Corps mitigation guidelines and WCA rules for requirements.

Replacement/Compensatory Mitigation via Wetland Banking. Complete this section if you are proposing to use credits from an existing wetland bank (with an account number in the State wetland banking system) for all or part of your replacement/compensatory mitigation requirements.

This is a state project for which MnDOT is providing replacement using wetland credits already in the MnDOT Specific Wetland Mitigation Banks. The replacement of WCA impacts will be at a ratio of 1:1 for replacement within the impact BSA and 1.5:1 for replacement outside the impacts BSA. Credits will be obtained from the nearest available road bank. The replacement of Corps jurisdictional impacts is TBD. A list of available bank sites and credits can be attached, if requested.

Wetland Bank Account #	County	Major Watershed #	Bank Service Area #	Credit Type (if applicable)	Number of Credits

Applicants should attach documentation indicating that they have contacted the wetland bank account owner and reached at least a tentative agreement to utilize the identified credits for the project. This documentation could be a signed purchase agreement, signed application for withdrawal of credits or some other correspondence indicating an agreement between the applicant and the bank owner. *However, applicants are advised not to enter into a binding agreement to purchase credits until the mitigation plan is approved by the Corps and LGU.*

Project-Specific Replacement/Permittee Responsible Mitigation. Complete this section if you are proposing to pursue actions (restoration, creation, preservation, etc.) to generate wetland replacement/compensatory mitigation credits for this proposed project.

WCA Action Eligible for Credit[1]	Corps Mitigation Compensation Technique[2]	Acres	Credit % Requested	Credits Anticipated[3]	County	Major Watershed #	Bank Service Area #

[1]Refer to the name and subpart number in MN Rule 8420.0526.
[2]Refer to the technique listed in *St. Paul District Policy for Wetland Compensatory Mitigation in Minnesota*.
[3]If WCA and Corps crediting differs, then enter both numbers and distinguish which is Corps and which is WCA.

Explain how each proposed action or technique will be completed (e.g. wetland hydrology will be restored by breaking the tile……) and how the proposal meets the crediting criteria associated with it. Applicants should refer to the Corps mitigation policy language, WCA rule language, and all associated Corps and WCA guidance related to the action or technique:

Attach a site location map, soils map, recent aerial photograph, and any other maps to show the location and other relevant features of each wetland replacement/mitigation site. Discuss in detail existing vegetation, existing landscape features, land use (on and surrounding the site), existing soils, drainage systems (if present), and water sources and movement. Include a topographic map showing key features related to hydrology and water flow (inlets, outlets, ditches, pumps, etc.):

Project Name and/or Number:

Attach a map of the existing aquatic resources, associated delineation report, and any documentation of regulatory review or approval. Discuss as necessary:

For actions involving construction activities, attach construction plans and specifications with all relevant details. Discuss and provide documentation of a hydrologic and hydraulic analysis of the site to define existing conditions, predict project outcomes, identify specific project performance standards and avoid adverse offsite impacts. Plans and specifications should be prepared by a licensed engineer following standard engineering practices. Discuss anticipated construction sequence and timing:

For projects involving vegetation restoration, provide a vegetation establishment plan that includes information on site preparation, seed mixes and plant materials, seeding/planting plan (attach seeding/planting zone map), planting/seeding methods, vegetation maintenance, and an anticipated schedule of activities:

For projects involving construction or vegetation restoration, identify and discuss goals and specific outcomes that can be determined for credit allocation. Provide a proposed credit allocation table tied to outcomes:

Provide a five-year monitoring plan to address project outcomes and credit allocation:

Discuss and provide evidence of ownership or rights to conduct wetland replacement/mitigation on each site:

Quantify all proposed wetland credits and compare to wetland impacts to identify a proposed wetland replacement ratio. Discuss how this replacement ratio is consistent with Corps and WCA requirements:

By signature below, the applicant attests to the following (only required if application involves project-specific/permittee responsible replacement):

- All proposed replacement wetlands were not:
  - Previously restored or created under a prior approved replacement plan or permit
  - Drained or filled under an exemption during the previous 10 years
  - Restored with financial assistance from public conservation programs
  - Restored using private funds, other than landowner funds, unless the funds are paid back with interest to the individual or organization that funded the restoration and the individual or organization notifies the local government unit in writing that the restored wetland may be considered for replacement.
- The wetland will be replaced before or concurrent with the actual draining or filling of a wetland.
- An irrevocable bank letter of credit, performance bond, or other acceptable security will be provided to guarantee successful completion of the wetland replacement.
- Within 30 days of either receiving approval of this application or beginning work on the project, I will record the Declaration of Restrictions and Covenants on the deed for the property on which the replacement wetland(s) will be located and submit proof of such recording to the LGU and the Corps.

Applicant or Representative: Title:

Signature: _____ Date:

Project Name and/or Number:

Attachment E
Local Road Replacement Program Qualification

Complete this part ***if*** you are a local road authority (county highway department, city transportation department, etc.) seeking verification that your project (or a portion of your project) qualifies for the MN Local Government Road Wetland Replacement Program (LGRWRP). If portions of your project are not eligible for the LGRWRP, then Attachment D should be completed and attached to your application.

Discuss how your project is a repair, rehabilitation, reconstruction, or replacement of a currently serviceable road to meet state/federal design or safety standards/requirements. Applicants should identify the specific road deficiencies and how the project will rectify them. Attach supporting documents and information as applicable:

Provide a map, plan, and/or aerial photograph accurately depicting wetland boundaries within the project area. Attach associated delineation/determination report or otherwise explain the method(s) used to identify and delineate wetlands. Also attach and discuss any type of review or approval of wetland boundaries or other aspects of the project by a member or members of the local Technical Evaluation Panel (TEP) or Corps of Engineers:

In the table below, identify only the wetland impacts from Part 4 that the road authority has determined should qualify for the LGRWRP.

Wetland Impact ID (as noted on overhead view)	**Type of Impact** (fill, excavate, drain)	**Size of Impact** (square feet or acres to 0.01)	**Existing Plant Community Type(s)** in Impact Area[1]	**County, Major Watershed #, and Bank Service Area #** of Impact[2]

[1]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

[2]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

Discuss the feasibility of providing onsite compensatory mitigation/replacement for important site-specific wetland functions:

Please note that under the MN Wetland Conservation Act, projects with less than 10,000 square feet of wetland impact are allowed to commence prior to submission of this notification so long as the notification is submitted within 30 days of the impact. The Clean Water Act has no such provision and requires that permits be obtained prior to any regulated discharges into water of the United States. To avoid potential unauthorized activities, road authorities must, at a minimum, provide a complete application to the Corps and receive a permit prior to commencing work.

By signature below, the road authority attests that they have followed the process in MN Rules 8420.0544 and have determined that the wetland impacts identified in Attachment D are eligible for the MN Local Government Road Wetland Replacement Program.

Road Authority Representative: Title:

Signature: _____ Date:

Technical Evaluation Panel Concurrence: Project Name and/or Number:

TEP member: Representing:

Concur with road authority's determination of qualification for the local road wetland replacement program? ☐ Yes ☐ No

Signature: _____ Date:

TEP member: Representing:

Concur with road authority's determination of qualification for the local road wetland replacement program? ☐ Yes ☐ No

Signature: _____ Date:

TEP member: Representing:

Concur with road authority's determination of qualification for the local road wetland replacement program? ☐ Yes ☐ No

Signature: _____ Date:

TEP member: Representing:

Concur with road authority's determination of qualification for the local road wetland replacement program? ☐ Yes ☐ No

Signature: _____ Date:

Upon approval and signature by the TEP, application must be sent to: **Wetland Bank Administration**
Minnesota Board of Water & Soil Resources
520 Lafayette Road North
Saint Paul, MN 55155

Wetland Permit Application
TH 53 Relocation Project
MnDOT District 1
Virginia, St. Louis County, Minnesota

SEH No. MNT01 130641

February 2015

This Wetland Permit Application follows the procedures and guidance for submitting Clean Water Act Section 404 permit requests as defined in the *Minnesota Local Road Authority Reference Guide to U.S. Army Corps of Engineers (Corps) Clean Water Act Section 404 & Rivers and Harbors Act Section 10 Permits, Version 1.a* (U.S. Army Corps of Engineers and Minnesota Department of Transportation, 2014).

I hereby certify that this Wetland Permit Application was prepared by me or under my direct supervision.

Natalie White — February 17, 2015

Prepared by: Natalie White, Biologist — Date
Minnesota Certified Wetland Delineator, No. 1226
Professional Wetland Scientist, No. 2488

Allyz Kramer — February 17, 2015

Reviewed by: Allyz Kramer, Sr. Biologist | Project Manager — Date
Minnesota Certified Wetland Delineator, No. 1023
Professional Wetland Scientist, No. 1884

Deric Deuschle — February 17, 2015

Reviewed by: Deric Deuschle, Sr. Biologist | QA/QC — Date
Minnesota Certified Wetland Delineator, No. 1009

Short Elliott Hendrickson Inc.
418 West Superior Street
Duluth, MN 55802-1512
218.279.3000

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Wetland Permit Application

TH 53 Relocation Project

Prepared for MnDOT District 1

1.0 Introduction

This wetland permit application has been prepared to describe the Minnesota Department of Transportation (MnDOT) proposed relocation of Trunk Highway 53 (TH 53) from a segment of roadway that operates on an easement subject to mineral rights held by RGGS Land and Minerals Co. (hereafter referred to as "RGGS") and Cliffs Natural Resources Inc.-owned, United Taconite, LLC (herein referred to as "UTAC"). UTAC leases the surrounding mine property from RGGS, the land and mineral owner. The existing highway corridor easement crosses UTAC's open pit mine, which extends a distance of about five (5) miles between the cities of Virginia and Eveleth (**Figure 1**).

The demonstration of wetland impact avoidance and minimization in this application follows the sequencing process of the Minnesota Wetland Conservation Act (WCA) of 1991 and the federal Clean Water Act. These procedures require that projects that may result in the draining or filling of wetland habitat should demonstrate avoidance and minimization of such impacts. Wetland impacts that cannot be feasibly avoided or minimized must be replaced by compensatory mitigation.

The proposed project will result in permanent impacts to wetland habitat for construction of realigned roadway. This application contains preliminary wetland impacts that were estimated using Level 1 delineation methods for the purposes of evaluating project alternatives to support the National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) being completed for the project. In spring 2015, MnDOT has contracted with Short Elliott Hendrickson Inc. (SEH) to complete Level 2 wetland delineation of the project area. These data collected by SEH and resulting wetland boundaries will be used to refine the proposed wetland and aquatic resource impacts described and quantified herein. These data are anticipated to be available and submitted to the wetland regulatory agencies by the end of May 2015.

This project may be eligible for a *Letter of Permission* under *Section 404 of the Clean Water Act*. Although there are Level 2 wetland delineation results pending submittal May 2015, sufficient information is provided herein for public noticing of the project. For this reason, this permit application is requesting a *Public Notice* of the permit application and review of the project sequencing, and avoidance/minimization standards for wetlands and aquatic resources, and eligibility for a *Letter of Permission*. A supplemental submittal with the Level 2 delineation data, and where necessary, any adjustments to the estimated wetland and aquatic resources impacts based on the Level 2 delineation, will be provided to the USACE for consideration of a *Letter of Permission* for the project.

Under the *Minnesota Wetland Conservation Act (WCA)*, this project is eligible for a *preliminary sequencing decision* prior to approval of a replacement plan application for permanent impacts to wetlands. This application is a request for a *Preliminary Sequencing Decision* under Minnesota Rule 8420.0325. Upon completion of a Level 2 delineation in the project area, supplemental data will be provided to complete this application and request a *Replacement Plan Decision* under Minnesota Rule 8420.0330.

1.1 Combined NEPA and Clean Water Act Section 404 Permitting Process

The Federal Highway Administration (FHWA) and MnDOT have coordinated with the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) to merge the National Environmental Policy Act (NEPA) and Clean Water Act Section 404 Permitting processes into one process (see correspondence in **Appendix A**). The proposed project is currently being reviewed through a federal Environmental Impact Statement (EIS); the Draft EIS was published for a 45-day agency and public comment on December 22, 2014. The end of the Draft EIS comment period is February 5, 2015. A copy of the Draft EIS is provided in **Appendix B** (selected figures, with text on CD).

The intent of the merged NEPA-Clean Water Act process is to preclude the need for revisiting decisions that have already been agreed upon earlier in the NEPA process, to encourage early substantive participation by the agencies, and to ensure that the information is adequate to address each agency's regulatory requirements. Through this coordination, MnDOT and the FHWA will coordinate with the USACE and USEPA to gain concurrence at different points in the process. This coordination process, as listed below, is structured around four (4) concurrence points to establish progress on the following steps. The concurrence points are: 1) Purpose and Need, 2) Range of Alternatives Considered, 3) Preferred Alternative, and 4) Mitigation of Impacts.

Written concurrence was received in September 2011 from USEPA and February 2012 from USACE on Concurrence Point #1 (Purpose and Need). Written concurrence was received in July 2012 from USEPA and USACE on Concurrence Point #2 (Range of Alternatives Considered) and in September 2013 (USACE) and October 2013 (USEPA) for Concurrence Point #2 as amended to include a new alternative (Alternative E-1A). Written concurrence on the Concurrence Point #3 (Preferred Alternative) was received February 2, 2015 in conjunction with the USACE formal agency review and public comment period for the Draft EIS. Concurrence on Point #4 (proposed mitigation) is anticipated as part of the WCA/USACE Joint Permit Application review process and would occur as part of Final EIS and Record of Decision (ROD).

The following sections summarize the Concurrence Points relative to the comprehensive data provided in the Draft EIS currently under public and agency review.

1.1.1 Concurrence Point 1: Purpose and Need

The need for undertaking this project is derived from the following transportation system needs:

- Respond to the roadway easement terms; address the requirements set forth in agreements between the State of Minnesota and the land owner.
- Provide a facility that meets regional and inter-regional system connectivity needs and inter-regional highway corridor performance targets.

- Maintain local connectivity to the regional system and maintain efficiency of local connections.
- Provide a facility that serves current and future capacity needs, while maintaining system mobility and safety.

1.1.2 Concurrence Point 2: Range of Alternatives Considered

MnDOT initiated Scoping of alternatives in 2011, and the process was ongoing in 2012 and 2013. Ultimately, five alternatives were carried forward for study in the Draft EIS:

- No-build Alternative (Existing Easement Agreement Area Closed)
- Existing TH 53 Alternative (Existing Easement Agreement Area Remains Open)
- Alternative M-1 (New Alignment through Active Mine)
- Alternative E-1A (New Alignment through Permit to Mine Boundary)
- Alternative E-2 (New Alignment around Permit to Mine Boundary)

These alternatives are discussed in more detail in **Section 3.0** below.

1.1.3 Concurrence Point 3: Preferred Alternative

The Preferred Alternative is Alternative E-2, which routes TH 53 around the UTAC permit to mine[1] and environmental setting[2] boundaries, and across the Rouchleau Pit. These resources are described in more detail in **Section 2.1** below.

1.1.4 Concurrence Point 4 (Pending): Mitigation

Mitigation for project impacts to wetlands and aquatic resources is proposed in the form of withdrawal of wetland mitigation bank credits from the MnDOT's state road transportation wetland bank. Proposed mitigation is described in more detail in **Section 5.4.2.1** below.

2.0 Project Description

2.1 Project Location

Approximate project termini are located at 2nd Avenue West and TH 53 and Cuyuna Drive and TH 53 in the City of Virginia, St. Louis County, Minnesota (see **Figure 1**). Arterial routes that intersect TH 53 nearby are TH 169, TH 37, and TH 135. These roadways provide connectivity within the regional area known as the "Quad Cities" – Virginia, Eveleth, Mountain Iron, and Gilbert – to the broader portions of northeastern Minnesota, and beyond. TH 53 is also the local connection to the "Midway" neighborhood, an area of the City of Virginia that is located just off TH 53, but is geographically separated from the rest of the city by the mining easement area.

The project will take place in portions of Sections 8, 9, 16, 17, 20, and 21, Township 58 North, Range 17 West. The site is located in the St. Louis River watershed, Lake Superior basin, and Bank Service Area 1.

[1] The *permit to mine* boundary refers to the extent of permit limits for UTAC mine operations, as approved by the MNDNR.
[2] The *environmental setting* boundary extends beyond the permit to mine area and includes additional areas that may be directly or indirectly affected by mine activity. This boundary is closely aligned with the area leased by the mine operator.

The project is proposed to cross the Rouchleau Pit, a manmade waterbody that has developed in the Mesabi/Rouchleau Pits post mining activity. This groundwater-fed waterbody does not have any public access and is not identified by the MNDNR as a public water.

2.2 Existing Conditions

Since 1960, MnDOT has operated this segment of TH 53 on an easement granted by United States Steel Corporation (now held by RGGS). The segment is subject to iron ore mining rights held by RGGS, and UTAC, the mine owner and operator. Under the 1960 easement terms, MnDOT agreed to relocate TH 53 upon notice from the mine owner/operator that continued mine operations were to proceed in this area.

On May 5, 2010, UTAC and RGGS provided notice to MnDOT that the 1960 easement rights would be terminated. Under the original easement terms, MnDOT must vacate the TH 53 easement within three years of notification. In response to the notice, MnDOT requested a seven-year timeframe for relocation of TH 53. The parties have signed an agreement to modify the easement vacation date to May 2017.

TH 53 is a primary north-south route in the upper Midwest. Within Minnesota, this corridor links Virginia, a secondary regional trade center, to Duluth, a primary regional trade center about 60 miles to the south. International Falls, a shopping trade center and an international Port of Entry between the U.S. and Canada, is located on TH 53 about 100 miles north of Virginia.

The TH 53 easement segment also connects the main/larger portion of the City of Virginia to the city's Midway neighborhood on the east side of the UTAC mine (see **Figure 1** for location of the Midway neighborhood). The existing corridor also enables public and private utility service through the corridor, particularly to the Midway area.

2.3 Purpose and Need

The *purpose* of the project is to address the termination of the 1960 easement agreement that affects the current highway location in order to continue to provide a transportation facility that will safely maintain adequate roadway capacity and mobility as well as local, regional, and inter-regional connectivity.

The *need* for the project can be described in four elements, as outlined below. Together, these needs support taking action to address the anticipated transportation system problem arising from the termination of the existing easement agreement.

2.3.1 Respond to the roadway easement terms

MnDOT must address the requirements set forth in agreements between the State of Minnesota and the landowner and mine operator. The May 2010 termination of the state's surface transportation easement rights is the primary need for action, requiring MnDOT to address the future of TH 53 at this location. Under the easement terms, MnDOT must vacate the above-noted portion of TH 53. The timeframe for response to the easement compliance, formalized through written agreement between MnDOT and RGGS/UTAC, is May 2017.

2.3.2 Provide a facility that meets system connectivity needs

There is a need for a roadway that meets regional and inter-regional system connectivity needs and inter-regional highway corridor performance targets. TH 53 is a High Priority Corridor on the National Highway System, linking Virginia to Duluth and International Falls.

The TH 53 easement segment provides an important link along this and other inter-regional routes, supporting these long-distance trips.

TH 53, TH 135, and TH 169 are also designated constitutional routes in Minnesota's trunk highway system, meaning that any proposed route relocation must closely evaluate connectivity to and between various communities. These routes and intersections are shown on **Figure 3.1-1** of the DEIS, (DEIS figures referenced are included in **Appendix B** of this application). In the TH 53 project area, constitutional routes are intended to provide the cities of Eveleth, Virginia, Gilbert, and Mountain Iron "…a reasonable means of communication, each with the other and other places in the state…" (Minnesota Statutes, Section 161). Similarly, TH 37 between Gilbert and Eveleth is designated as a constitutional route.

2.3.3 Maintain local connections and connectivity to the regional transportation system

The highway system must have connectivity both to the regional system, as well as maintaining efficient local connections. There is a need to maintain highway system linkages and route continuity, even with the possible removal of the segment of TH 53 through the existing easement agreement area. The original easement location decision recognized:

- The need for a direct highway connection to serve many regional and local highway trips.
- The need to cross future mineral reserves and anticipate conflicts with future mining (the issue now being addressed).

The transportation effectiveness of the original TH 53 route in serving both local and regional trips is evidenced by existing and forecast traffic volumes. This segment of the surface transportation easement carries more traffic (more than 22,000 vehicles per day) than any other segment of TH 53 in the study area, which encompassed TH 53 and connecting routes in the vicinity of Virginia, Mountain Iron, Gilbert, and Eveleth (traffic study area outlined in **Figure 3.1-1** of the DEIS, included in **Appendix B**). While such focused heavy demand on about 1-½ miles of highway is remarkable, it is not surprising given the route's strategic location to these four communities and to the region. In fact, from a highway network perspective, the TH 53 easement segment is comparable to a major river crossing, as there are limited opportunities to cross through the mineral reserves. Now, as compliance with the surface transportation easement terms necessitates a new alignment, travelers continue to need an efficient and effective connection for many trip purposes.

2.3.4 Provide a facility that serves capacity needs

TH 53 must serve current and future capacity needs while maintaining system mobility and safety. In 2009, traffic volumes on TH 53 within the study area ranged from 12,000 vehicles per day (vpd) to more than 22,000 vpd. The highest average annual daily traffic (AADT) volumes, both current and projected, occur on the easement segment of TH 53. The 2009 traffic volume on TH 53 was 22,400 vpd between 2nd Avenue West and TH 135 in Virginia (**Figure 3.1-1** of **Appendix B**). This segment is expected to carry over 24,000 vpd by 2017 and over 28,600 vpd by 2037. There is a need for TH 53 to convey the existing and forecast traffic demands while addressing inter-regional corridor performance standards and efficient connections, as described in **Sections 2.3.2** and **2.3.3** above.

3.0 Project Alternatives

A number of design alternatives were considered for how well each alternative met the project Purpose and Need, potential for social, economic, and/or environmental impacts, and

practicability including relative estimated costs, and potential engineering feasibility issues. A number of alternatives were eliminated from consideration in the scoping period of the NEPA process, due to greater environmental and other impacts. For example, one alternative (W-1A) proposed a re-route of TH 53 on existing two-lane roads, which would be upgraded to four-lane highways. This alignment would route TH 53 around Eveleth, the Midway neighborhood, and part of the business district of Virginia. Alternative W-1A had much higher resource impacts (estimated at 95 acres of wetland) and socioeconomic impacts due to the bypass of business districts and potential of disconnecting the communities of Eveleth and Gilbert from public safety and emergency services. Due to these greatly increased impacts, this alternative was not carried forward for more detailed study.

Five alternatives were carried forward and studied in detail in the DEIS. Descriptions of these alternatives follow. Potential wetland impacts for the alternatives were calculated using data from the Level 1 (desktop resource review, no routine onsite delineation conducted) wetland assessment described in more detail in **Section 5.1**. A Level 2 onsite delineation is planned for spring 2015; wetland impact amounts will be updated as necessary after the field delineation.

3.1 No-build Alternative

The no-build alternative was divided into two scenarios for the purpose of evaluating impacts: closing the highway in the easement area, and keeping the existing highway open in the easement area.

3.1.1 No-build Alternative (Existing Easement Agreement Area Closed)

This no-build alternative would respond to the easement terms by closing the segment of TH 53 within the existing easement agreement area and reroute traffic to existing highways. Signage would officially mark the reroute following existing TH 37, CSAH 7, and TH 169. The existing roadways include mostly two-lane segments (with the exception of a 0.4 mile segment of four-lane TH 169), at-grade railroad crossings, and signalized intersections. A transportation analysis was conducted for the alternatives, and the result for the this no-build alternative indicated that the anticipated Level of Service (LOS) for roadways in the re-route would drop from A/B/C (stable to free flow of traffic) at all segments at the time of the study to LOS E/F (highly congested) in 2017 at four of the segments. The anticipated 2037 LOS would be F (most congested) at all of the segments. Travel distances and travel times would more than double under this no-build alternative from Virginia to either Eveleth or Gilbert compared to existing conditions. Local travel time increases would range from 6.5 to 21.2 minutes per trip. This would negatively impact the connectivity of the Iron Range communities.

This alternative, using existing roadways, would have no wetland or waterway impacts. However, because of the limitations of the reroute as described above, this alternative does not meet the project purpose and need as it relates to adequate travel times, connectivity, and traffic capacity.

3.1.2 No-build Alternative (Existing Easement Agreement Area Remains Open)

This no-build alternative, though not in compliance with terms of the existing easement agreement, would keep TH 53 in place and open to traffic by addressing the economic, legal, and engineering issues associated with resolving the terms of the existing surface transportation easement agreement. The State of Minnesota would not vacate TH 53 but would keep the highway open. Keeping the highway open in its current location would require

condemnation by the State of Minnesota to oppose termination of the existing easement agreement knowing that the owner and lessee are not willing sellers. Even with the use of eminent domain, this alternative may require a large payment from the State of Minnesota to the owners and operators of the mineral rights and mining lease (i.e., RGGS and UTAC, respectively). If the eminent domain action were successful, the buyout cost of the land could equal or exceed the cost of the ferrous resource reserves (estimated in the DEIS at $400 million to $600 million) in which UTAC intends to mine.

This alternative, using the existing alignment, would have no wetland or waterway impacts. However, using the existing easement area has the highest cost of the alternatives considered at $400-$600 million compared to the other alternatives carried forward in the DEIS. [M-1 is the next most costly alternative, with a total capital cost for construction of $315-$450 million. Alternative E-2 (the preferred alternative) is anticipated to cost $180-240 million. These alternatives are summarized in more detail in **Section 3.2**, “Design and Location Alternatives”, below.]

Continuing to use the existing surface transportation easement agreement area also presents an engineering risk, as the UTAC permit to mine and environmental setting boundaries would continue to extend across the surface transportation easement area, and mining would eventually take place on both sides of the highway. This has potential for conflicts with the mine business for a number of reasons. Air emissions from vehicle traffic pose a business risk to UTAC, whereas emissions from vehicle traffic on TH 53 could cause exceedances of air quality standards in the environmental setting boundary for the mine. Blasting setbacks from the road through the mine may encumber mineral resources outside the surface transportation easement area. Mining activity would also result in a deep pit on both sides of the roadway, posing engineering challenges for safe roadway side slopes as well as access problems for mining equipment to work on both sides of the roadway. Due to cost, legal, and engineering issues, this alternative was rejected as not practicable.

3.2 Design and Location Alternatives

Three alternative alignments of the TH 53 relocation were considered in the DEIS.

3.2.1 Alternative M-1 (New Alignment through Active Mine)

This alternative considers construction of a new four-lane TH 53 alignment. Alternative M-1 would be routed through the active UTAC mine (**Figure 2.1-5** of the DEIS, in **Appendix B**). Approximately one mile of new four-lane roadway would be constructed through the partially-backfilled Auburn Pit (within the mine). The alignment design would have to allow for mine operations on both sides of the new highway. A seismic study determined that engineered fill could be used across most of the mine, with bridges constructed in two locations to accommodate mining access needs.

The TH 135 connection with TH 53 would have to change from an interchange to a signalized intersection under this alternative, as there is not adequate space above the mine wall without involving substantial business and residential relocations in the Midway neighborhood of Virginia.

Alternative M-1 would cross a mine area that will remain active for many years. In order to reduce the potential conflict with remaining ferrous resource reserves, a constrained highway cross section was assumed for the roadway through the mine. A constrained cross section would use a median barrier rather than a median with a ditch and 1:4 side slopes, saving approximately 30 feet in width of the roadway. Standard blasting best practices by the mine include a 300 foot setback from the edge of right-of-way. If this setback encumbers ferrous

resources, the loss of access to these resources would be expected to be included in the negotiation for acquisition of right-of-way for this alternative. The engineered fill for the road alignment could be constructed with 1:2 slopes, minimizing the footprint of the fill section in the mine. The depth of the active mine south of this alignment currently ranges from 100 to 200 feet deep. Future mining along the west side of the mine may extend down 500 feet or more.

This alternative was recognized as presenting compliance risks for the mine, based on air emissions measurements taken at the environmental setting boundary. Vehicle emissions from a route through the mine could contribute to these measurements exceeding standards. In order to address the potential mine business risks due to these air quality compliance issues, a covering over a portion of the Auburn Pit crossing (an elevated tunnel concept) was evaluated as a potential mitigation strategy. This tunnel could be constructed with concrete barrier walls on each side supporting a three-sided concrete box structure to enclose the road and air handling equipment.

Alternative M-1 is a higher cost alternative compared to the other build alternatives. Approximate cost of construction for Alternative M-1 is $315-$450 million, compared to $175-$300 million for Alternative E-1A and $180-$240 million for Alternative E-2. Potential wetland impacts for this alternative were estimated at 8.8 acres, which is greater than the wetland impacts estimated for the preferred alternative (approximately 6.03 acres, as described in **Section 5.4** below). Due to considerations of cost, potential conflict with mining, and increased wetland impacts, this alternative was rejected because it is impracticable.

3.2.2 Alternative E-1A (New Alignment through Permit to Mine Boundary)

Alternative E-1A is routed through the UTAC permit to mine and environmental setting boundaries, north of existing TH 53 (see **Figure 2.2-1** of the DEIS, in **Appendix B**). This alternative routes TH 53 across the Rouchleau Pit along an existing submerged haul road embankment. After crossing the pit, the alignment turns to the southwest to reconnect with existing TH 53 near 2nd Avenue West. The road cross section was assumed to be constrained across the Rouchleau Pit (four lanes with a two-foot wide median barrier). Two design options for crossing the pit on this alignment were evaluated, a causeway/fill option and a bridge option. The bridge option would allow for future mine access to the north of TH 53, but may restrict distance from the bridge that mining/blasting activity could occur. A causeway/fill design may require a future bridge to be constructed east of the pit to allow for mining access. Either option would have increased right-of-way costs compared to the preferred alternative, due to the alignment within the environmental setting and permit to mine boundaries. Construction costs would also be increased due to the crossing of the Rouchleau Pit at the widest section.

Potential wetland impacts for this alternative are estimated at 10.5 acres, which is greater than the wetland impacts for the preferred alternative (approximately 6.03 acres, as described in **Section 5.4** below). Due to considerations of engineering and constructability concerns and increased wetland impacts, this alternative was rejected because it is impracticable.

3.3 Preferred Alternative – Alternative E-2 (New Alignment around Permit to Mine Boundary)

Alternative E-2 is routed around the UTAC permit to mine and environmental setting boundaries. Under this alternative, the new TH 53 alignment follows a northeasterly track on the present day Landfill Road corridor before turning to the west to cross over the Rouchleau

Pit. The preferred alignment is shown in **Figures 1** and **2**. Upon crossing the pit, Alternative E-2 turns to the southwest following an abandoned railroad corridor that runs between the pit and residential neighborhoods before reconnecting to existing TH 53 at 2nd Avenue West. In the DEIS, two options are considered for Alternative E-2: the "straight" option and the "curved setback" option. These options refer to the alignment of TH 53 south of the interchange with TH 135. The straight option follows the existing alignment, and the curved setback option would curve to the east before turning back to the interchange with TH 135. Since production of the DEIS, updated project layouts developed by the road design team use the straight option. Impacts considered in this application are due to the straight option of Alternative E-2.

The most feasible pit crossing method for this alternative was determined to be a bridge; a fill option was eliminated based on constructability issues. A fill section across the pit is not expected to be feasible due to the depth of water and the depth of the pit itself, and the width of the fill footprint at this location. At 1:2 slopes the fill footprint at the bottom of the fill would be at least 950 feet wide and require nearly 10 million cubic yards of fill material; with more reasonable slopes of 1:4, the footprint and fill material needed would double. Additionally, given the depth of water to be contained on the north side of the fill (125 feet currently), the fill would require engineering for a dam to support the water pressure as well as blasting vibration. The dam design would also need to consider future water level fluctuations as dewatering changes occur. Given the extent of constructability concerns and costs compared to a bridge, the fill option was dropped from further consideration for this alternative. Instead, a proposed bridge would span 1,350 feet across the Rouchleau Pit. The pit is approximately 250 feet deep at the crossing location.

Alternative E-2 provides a direct route between communities comparable to existing conditions. This alternative has only minor potential impacts to the business community and local traffic, while potentially allowing for the provision of utilities between Virginia's central business district and the Midway area. In addition, Alternative E-2 could avoid the UTAC environmental setting boundary, which could eliminate the business risk to UTAC regarding air quality compliance.

This alternative, although outside the UTAC permit to mine and environmental setting boundaries, does cross over known ferrous and non-ferrous metallic resources. This could lead to future mining conflicts. However, at this time there is no known effort to mine this area.

Because the Rouchleau Pit is the municipal water source for the City of Virginia, snow removal for the new highway alignment is planned to transport snow to a designated snow dump area that does not drain to the Pit. The location of the planned snow dump area is shown on **Figure 3**. This area was evaluated by SEH using GIS remote sensing and desktop review for wetland habitat. No wetlands were identified in the snow dump area. This finding will be field verified in spring 2015.

Costs for Alternative E-2 are estimated at $180-$240 million. Potential wetland impacts for the preferred alternative are approximately 6.03 acres, as described in **Section 5.4** below. This is the smallest potential impact of the build alternatives. Alternative E-2 was selected as the preferred alternative because it meets the project purpose and need by responding to the easement terms, meets system connectivity needs, maintains local connections, and serves capacity needs. Alternative E-2 was determined the most practicable solution from a cost and engineering standpoint, and minimizes wetland and aquatic resource impacts to the greatest extent practicable.

4.0 General Public Interest Factors

The following summary describes the effects and potential consequences due to the preferred alternative on several general factors considered to be in the public interest, which may be helpful in preparing the wetland permit decision(s) and evaluation of potential effects for the local, state, and federal wetland permits needed for the project.

1. **Noise Levels:** Minor adverse effect. State noise standards would be exceeded at residential locations along the project corridor, specifically in a residential area north of TH 53 and east of 2nd Avenue West. Mitigation in the form of a noise wall is preliminarily cost effective at this area.

2. **Aesthetic Values:** Minor adverse effect. The project would open up new views of open space from TH 53. There would be a change in views to/from UTAC and of the Rouchleau Pit. Views to and from the highway would be partially blocked by median and safety barriers. MnDOT will develop visual quality guidelines for the project and take input from a Visual Quality Review Committee.

3. **Recreation:** Minor adverse effect. The preferred alternative introduces new crossings of the Mesabi State Trail and snowmobile trails. Trails would continue to be used in their current form until UTAC/RGGS removes them. Safe crossings of the trails would be provided, as long as the trails persist. The project impacts 4.3 acres of land along the west edge of an Off-Highway Vehicle Recreation Area (OHVRA), and would have negligible impacts to OHVRA activities. Impacts to the OHVRA have been minimized to the extent practicable, and mitigation measures have been coordinated with the FHWA and MNDNR.

4. **Transportation:** Negligible effect. Daily traffic volumes are expected to be similar to the traffic volumes on the easement segment. The new intersections/interchanges would operate at an acceptable Level of Service (LOS) through 2037. There would be a negligible change in travel times.

5. **Public Health:** Minor adverse effect. There would be a slight increase in dust and noise during the construction period.

6. **Safety:** No effect. Traffic volumes and road capacity will not change.

7. **Community Growth:** Negligible effect. A new interchange at TH 135 may increase access to TH 53 compared to the existing interchange.

8. **Business/Home Relocations:** Minor adverse effect. Right-of-way will be required from eight (8) parcels, with one (1) relocation. Access modification would be necessary on up to three (3) parcels. Most acquisition would be from RGGS and State of Minnesota property. Landowners would be compensated via the federal Uniform Relocation Act, and a constrained roadway footprint would be used where possible to minimize the impacts.

9. **Existing/Potential Land Use:** There is a potential for an adverse effect to future mining. Potential future conflicts with ferrous and non-ferrous metallic resources could occur due to the alignment crossing over known resources. A constrained roadway footprint would be used where practicable to minimize the impacts in resource-rich areas. However, at this time, there is no known effort to mine this area of the preferred alternative.

10. **Property Values:** Negligible effect. Property value was considered in decisions about right-of-way acquisition, i.e., if a property would be made uneconomical or non-compliant through a partial acquisition, it would become a total acquisition. Minimal changes to businesses along TH 53 would be expected given that the traffic patterns would not change substantially under the preferred alternative.

11. **Tax Revenues:** Negligible effect. Most right-of-way acquisition would be from RGGS and State of Minnesota property. Negligible effect to revenues from the Taconite Production Tax, collected by the state and paid by mines in lieu of property taxes. This tax is based on the amount of taconite produced annually, and mine operations are anticipated to continue under the preferred alternative.

12. **Public Facilities and Services:** Minor adverse effect. Existing utility permits would be terminated and utilities would need to relocate. MnDOT will coordinate with utility owners to find alternate utility routes.

13. **Employment:** Minor beneficial effect. The project would increase employment opportunities during construction.

14. **Business Activity:** Potential for an adverse effect to future mining. The proposed project would have no conflict with the permit to mine or environmental setting boundaries of the UTAC mine. Potential for future conflict with ferrous and non-ferrous metallic resources exists due to the alignment crossing over known resources. However, at this time, there is no known effort to mine this area of the preferred alternative. A constrained roadway footprint would be used where practicable to minimize the impacts in resource-rich areas. The proposed alignment outside of the UTAC environmental setting boundary poses no risk for air quality compliance impacts to UTAC mine operations.

15. **Farmland/Food Supply:** No effect.

16. **Flooding:** No effect. No floodplain in the vicinity of the project.

17. **Energy:** Minor adverse effect. There would be an increase in fossil fuel utilization during construction.

18. **Mineral Needs:** Potential for adverse effect to future mining. The project has potential for future conflict with ferrous and non-ferrous metallic resources, due to the alignment crossing over known resources. However, at this time, there is no known effort to mine this area of the preferred alternative. A constrained cross-section design will be used where practicable to minimize the roadway footprint in resource-rich areas.

19. **Air Quality:** Minor adverse effect. There would be an increase in dust and fossil fuel emissions during construction. These air effects should return to normal circumstances after the construction period.

20. **Terrestrial Habitat:** Minor adverse effect. The preferred alternative converts approximately 37 acres of forest to right-of-way. The habitat type impacted consists primarily of early successional forest previously disturbed by mining activities. This habitat is neither unique nor rare in the region. BMPs for control of weeds and invasive species would be followed.

21. **Aquatic Habitat:** Minor adverse effect. The preferred alternative has impacts to approximately 6.03 acres of impact to wetlands. Mitigation for loss of wetlands, which provide habitat for aquatic flora and fauna, is proposed in the form of debit of mitigation bank credits.

22. **Habitat Diversity and Interspersion:** Minor adverse effect. The proposed alignment isolates some forest and wetland habitat between the new alignment and the Rouchleau Pit. The habitat type impacted consists primarily of early successional forest and shrub-carr previously disturbed by mining activities. This habitat is neither unique nor rare in the region. Mitigation for loss of shrub-carr and forested wetland is proposed in the form of debit of mitigation bank credits.

23. **Water Quality:** No overall effect. The preferred alternative has no net change in impervious surface from the existing condition. Per National Pollutant Discharge Elimination Systems (NPDES) requirements, treatment of stormwater is not required based on the net change in impervious surface area for the project. However, water quality treatment of the stormwater runoff from the constrained cross section would be included to maintain water quality of the Rouchleau Pit (City of Virginia's water supply). Construction erosion and sediment control would be provided in accordance with Minnesota Pollution Control Agency (MPCA) and NPDES requirements.

24. **Water Supply:** No overall effect. The preferred alternative alignment is within the Virginia Inner Emergency Response Area of the public water supply source (the area in which contaminant releases would present an acute health concern to water users). For this reason, roadway runoff and spill containment are important considerations in design to prevent water quality impacts to the City of Virginia water supply. Turbidity controls will be used during construction to mitigate impacts, as well as implementation of spill containment provisions and specifications for the source and nature of any fill material used.

25. **Groundwater:** There is potential for construction-related adverse effects. A management plan would be developed for properly handling, treating, storing, and disposing of wastes and other regulated materials with potential to contaminate groundwater. The plan would also establish protocol to minimize impacts in the event a release of hazardous substances occurs during construction. A Phase I ESA identified nine (9) sites with potential contamination along the preferred alternative route, and further evaluation identified three of these sites as needing further investigation or consideration by MnDOT. Construction activities on those sites would need to consider potential for encountering contaminated soil. A Response Action Plan (RAP) will be completed, as necessary, prior to any right-of-way acquisition or construction by MnDOT. A RAP would set a protocol for properly handling and treating contaminated soil and/or groundwater that could be encountered during construction as identified in the contract special provisions or the RAP.

26. **Soils:** Minor adverse effect. There are slope stability and erosion issues associated with bridge abutments at the edge of the Rouchleau Pit. Erosion and stability impacts will be mitigated through implementation of erosion control BMPs within the project area.

27. **Shoreline Processes:** No adverse effect. There would be placement of fill along limited areas of the Rouchleau Pit wall for placement of abutments for the bridge crossing, but the pit walls are manmade, steep side slopes. The preferred alternative will have no impacts to the open water area of the pit.

28. **Wetlands:** Adverse effect. Fill/excavation impacts to approximately 6.03 acres of wetland within 14 individual wetland areas. Mitigation is proposed through the purchase of bank credits at a minimum 1:1 replacement ratio. This permit application contains additional detail on affected wetlands, wetland impacts, and proposed mitigation. Wetland impact is minimized compared to the other build alternatives.

29. **Secondary and Cumulative Effects:** Minor adverse effect. Future projects with potential to impact wetlands include general development proposed by the City of Gilbert, existing and potential future mining and mining-related activities at the UTAC mine, expansion of the Minntac mine in Mountain Iron, and expansion of the Iron Range OHVRA. Future projects would be subject to local, state, and/or federal regulatory permits that would likely require compensatory mitigation to offset adverse impacts.

30. **Navigation:** No effect. The Rouchleau Pit has no public access.

31. **Endangered Species:** MnDOT is coordinating with the USFWS and MNDNR to assess the potential for impacts to the northern long-eared bat, which is proposed for listing as an endangered species. Based on current information, the impacts of the preferred alternative are not anticipated to jeopardize the continued existence of the species (as discussed in Section 5.11.2 of the DEIS).

    There are documented occurrences of Canada lynx within 10 miles of the project area; however, the highway is proposed to remain outside of Canada lynx critical habitat. The USFWS has concurred with the determination that the project *may affect but is not likely to adversely affect* the Canada lynx (as discussed in Section 5.11.2 of the DEIS).

    There are occurrences of gray wolf near the project area. Wolves have once again become listed as a federally threatened in Minnesota as of December 2014. The gray wolf is associated with wooded habitat that is present within the project area; however, this habitat is neither unique nor rare in the region. The scale of the proposed project should have an insignificant effect on wolf habitat, and therefore effects to gray wolf are anticipated to be *negligible*. It is anticipated that comments provided from the USFWS during review of the Draft EIS will further inform the environmental analysis of potential effects to gray wolf.

    Efforts have been made to minimize impacts to wildlife through minimization of vegetation (habitat) removal to the extent practicable by following previously disturbed areas (roads and mined lands).

32. **Historical/Archaeological:** No effect. The project will not impact any sites or properties of historical or cultural significance. The Minnesota State Historic Preservation Office (SHPO) provided concurrence with the finding of no historic properties affected by the preferred alternative (as discussed in Section 4.4 of the DEIS).

33. **Wild and Scenic Rivers:** No effect. There are no designated Wild and Scenic Rivers within the project area.

34. **Tribal Trust Resources:** No effect. There are no Tribal Trust Resources in the project area.

35. **State-listed Impaired Section 303(d) Waters:** No effect. No state-listed impaired waters are stormwater receiving waters for this project.

5.0 Wetlands and Aquatic Resources

5.1 Wetland Delineation

Wetlands within the project area were preliminarily identified by Kimley-Horn as part of the development of the Draft Environmental Impact Statement (DEIS). This wetland review was based on a Level 1 assessment that utilized current digital data from the US Geological Survey (USGS), US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (**Figure 4**), MNDNR Public Waters Inventory (PWI) (**Figure 5**), US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) hydric soils data (**Figure 6**), and a visual inspection of selected wetlands. Topography of the project area is shown in light detection and ranging (Lidar) generated 10-foot contours on **Figure 7**.

A Level 1 delineation does not incorporate onsite assessment including upland-wetland transects and soil profiles, as outlined in the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987). Wetland boundaries were verified by photointerpretation, review of digital data, and a solely visual inspection of wetland areas for general wetland types and characteristics conducted on June 20-21, 2012.

A Level 2 (routine onsite) delineation is planned for spring 2015. Updated wetland impact information will be available after the Level 2 delineation is complete.

5.2 Results

The preliminary assessment identified, delineated, and classified wetlands within corridors adequate to evaluate all of the alternatives considered in detail in the DEIS. The assessment identified 34 wetlands within or nearby the alignment of the preferred alternative, as shown in **Figure 8**. **Table 1**, below, provides a summary of the Level 1 delineated wetlands including community type and typical characteristics. Wetlands in the project area are generally medium to low quality (based on review of aerial photos and visual inspection), in an area largely previously disturbed for mining activities. Descriptions of wetland community type and an assessment of quality for the wetland basins can be found in the Water Resources Technical Report in **Appendix C**.

Table 1
Summary of Level 1 Delineated Wetlands

Basin ID	Eggers and Reed[1] Classification	Cowardin[2] Classification	Circular 39[3] Classification	Size (acres)	Notes
Natural Wetlands					
11	*Fresh (Wet) Meadow*	*PEMB*	Type 2	3.70	No change due to project
12	*Fresh (Wet) Meadow / Shallow Marsh*	*PEMB/F*	Type 2/3	0.96	Located within cloverleaf of existing exit ramp
13	*Fresh (Wet) Meadow / Shrub-Carr / Floodplain Forest*	*PEMC/SS/FO*	Type 1/2/6	5.24	Basin adjacent TH 53 exit ramp

Table 1 (Continued)
Summary of Level 1 Delineated Wetlands

14	*Fresh (Wet) Meadow*	*PEMB*	Type 2	0.30	No change due to project
15	*Fresh (Wet) Meadow*	*PEMB*	Type 2	0.60	No change due to project
16	*Fresh (Wet) Meadow / Shrub-Carr*	*PEM/SSB*	Type 2/6	6.43	Basin adjacent TH 53 entrance ramp
17	*Shallow Marsh / Fresh (Wet) Meadow*	*PEMB/F*	Type 2/3	1.10	No change due to project
19	*Shallow Marsh / Sedge Meadow*	*PEMB/F*	Type 2/3	3.50	No change due to project
20	*Shallow Marsh / Sedge Meadow*	*PEMB/F*	Type 2/3	11.3	Large basin adjacent Landfill Road
21	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.05	No change due to project
22	*Shallow Marsh*	*PEMF*	Type 3	0.75	Linear basin along Landfill Road surrounded by mine dumps
23	*Sedge Meadow / Shrub-Carr*	*PEM/SSB*	Type 2/3	0.70	Linear basin between Landfill Road and unnamed road surrounded by mine dumps
24	*Shallow Marsh / Sedge Meadow*	*PEMB/F*	Type 2/3	3.42	Linear basin between Landfill Road and unnamed road, surrounded by mine dumps
25	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.39	Linear basin along unnamed road surrounded by mine dumps
26	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.94	Basin near interchange and unnamed road, surrounded by mine dumps
27	*Shallow Marsh / Sedge Meadow*	*PEMB/F*	Type 2/3	6.20	No change due to project
28	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.03	Linear basin along unnamed surrounded by mine dumps
29	*Sedge Meadow*	*PEMB*	Type 2	0.36	Linear basin along Landfill Road surrounded by mine dumps
31	*Shallow Marsh*	*PEMF*	Type 3	0.33	Linear basin along TH 53 roadside
32	*Shallow Marsh / Sedge Meadow*	*PEMB/F*	Type 2/3	11.76	Large wet basin along TH 53 roadside
33	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.93	Located within median of existing highway
44	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.27	Basin along unnamed road surrounded by mine dumps
Roadside Ditches Cut in Uplands, but Having Developed Wetland Characteristics					
30	*Seasonally Flooded Basin*	*PEMC*	Type 1	0.20	Wet bottom of a roadside ditch on the east of Landfill Road
43	*Fresh (wet) Meadow*	*PEMB*	Type 2	0.18	Wet bottom of a ditch along the Mesabi Trail

[1] *Wetland Plants and Plant Communities of Minnesota and Wisconsin* (Eggers and Reed, 2011).

[2] *Classification of Wetlands and Deepwater Habitats of the United States.* (Cowardin *et al.*, December 1979).

[3] *Wetlands of the United States, Circular 39.* (Shaw and Fredine, United States Fish and Wildlife Service, 1956).

5.3 Regulatory Jurisdiction

Wetlands in the project area are regulated by several agencies at the local, state, and federal levels including the USACE and the EPA at the federal level; the Minnesota Board of Water and Soil Resources (BWSR) and the MPCA at the state level; and MnDOT at the local level. MnDOT has accepted the responsibility for the administration of the Minnesota Wetland Conservation Act (WCA) of 1991.

5.4 Sequencing

5.4.1 Avoidance and Minimization

Efforts were made during alternatives development and preliminary engineering to minimize wetland fill impacts to the extent practicable by following previously disturbed areas (e.g., roads, mined lands). Much larger areas of wetland impacts have been avoided as part of the Scoping process; by eliminating the West Corridor alternatives (see discussion of Alternative W-1A in **Section 3.0**) from further consideration, dozens of acres of wetland impact have been avoided.

A constrained cross section was assumed in some locations for the build alternatives to avoid various resource impacts, resulting in some additional minimization of wetland impacts. The straight option was selected for the preferred alternative (discussed in **Section 3.3** above), further reducing wetland impacts by approximately 2.40 acres compared to the curved setback option.

5.4.2 Wetland and Aquatic Resource Impacts

The preferred alternative has potential to impact approximately 6.03 acres of wetland. Impacts are summarized in **Table 2** below, and impact locations shown on **Figure 9**. Of the total impact amount (6.03 acres), approximately 3.47 acres of wetland may be regulated under the CWA. A request for a jurisdictional determination on 2.56 acres of wetland in the project area has been submitted to the USACE under separate cover. In regard to the Minnesota WCA, of the total wetland impact amount (6.03 acres), approximately 5.67 acres of wetland within the project area are anticipated to be within the scope of the WCA. The remaining 0.35 acres of wetland in the project area would be considered incidental because these wetland areas developed in roadside ditches originally cut in uplands. See **Table 2** below.

Project plan sheets and representative cross sections of wetland impact areas will be developed after the Level 2 wetland delineation is conducted in spring 2015, and then provided to USACE and the WCA LGU. Wetland impact numbers will be refined based on the Level 2 delineation, and divided into permanent fill impacts, permanent cut impacts, and temporary impacts.

Generalized surface water flow paths for the project area were shown in Figure 5.1-1 of the DEIS (included in **Appendix B**). In preparation for a request for an approved jurisdictional determination, additional flow path analysis was conducted in order to identify the hydrologic catchment area for each wetland (summarized in **Table 2** below). The analysis included review of Lidar contours, culvert location and flow path information provided by MnDOT and the road design team, and culvert location and flow path information provided by the City of Virginia. Flow paths showing connectivity of wetlands to either the Rouchleau Pit or Manganika Lake are shown on **Figure 10**.

Based on more detail provided by the engineering team preparing final layouts, the depiction of flow direction for wetlands in the project area has been modified from what was presented

in the DEIS. Specifically, the area of flow near the Mesabi Trail and Landfill Road was analyzed in more detail. A zoomed-in view of flow paths near the intersection of the Mesabi Trail and Landfill Road is shown in **Figure 10-1**. Lidar contours indicate that the location of the Mesabi Trail near Wetlands 23, 25, and 28 provides a physical divide between the two major catchment areas (i.e., the Rouchleau Pit and Manganika Lake). What results is that Wetlands 23, 28, 29, and 30 outlet to the north into the Rouchleau Pit; Wetlands 25 and 26 outlet to the west to Manganika Lake. Visual inspection by the roadway design team confirmed there are no culverts or other surficial connections under or across the trail between Wetlands 23 and 25 that would indicate that Wetlands 23, 28, 29, and 30 flow toward Manganika Lake.

Table 2
Preliminary Wetland and Aquatic Resource Impacts

Basin ID	Eggers and Reed Classification	Hydrologic Catchment Area[1]	Size of Impact (acres)
Basins within the Manganika Lake Hydrologic Catchment Area			
12	Fresh (Wet) Meadow / Shallow Marsh	Manganika Lake	0.00 [2]
13	Fresh (Wet) Meadow / Shrub-Carr / Seasonally Flooded Basin	Manganika Lake	1.04
16	Fresh (Wet) Meadow / Shrub-Carr	Manganika Lake	1.09
25	Fresh (Wet) Meadow	Manganika Lake	0.11
26	Fresh (Wet) Meadow	Manganika Lake	0.70
31	Shallow Marsh	Manganika Lake	0.06
32	Shallow Marsh / Sedge Meadow	Manganika Lake	0.29
33	Fresh (Wet) Meadow	Manganika Lake	0.00 [2]
43	Fresh (Wet) Meadow – Wet Ditch [3]	Manganika Lake	0.18
Basins within the Rouchleau Pit Hydrologic Catchment Area			
17	Shallow Marsh / Fresh (Wet) Meadow	Rouchleau Pit	0.00 [2]
22	Shallow Marsh	Rouchleau Pit	0.06
23	Sedge Meadow / Shrub-Carr	Rouchleau Pit	0.45
24	Shallow Marsh / Sedge Meadow	Rouchleau Pit	1.71
28	Fresh (Wet) Meadow	Rouchleau Pit	0.02
29	Sedge Meadow	Rouchleau Pit	0.05
30	Seasonally Flooded Basin – Wet Ditch [3]	Rouchleau Pit	0.19
44	Fresh (Wet) Meadow	Rouchleau Pit	0.09
Total			**6.03 acres [4, 5]**

[1] Wetlands draining to the Rouchleau Pit with no surficial connection to other waters of the U.S. are not anticipated to be regulated by the USACE.
[2] Although within the project limits, Wetlands 12 and 33 are in areas where nearby pavement will be obliterated only. Wetland 17 is nearby the project limits. No impacts are proposed to these wetlands.
[3] Wetlands 30 and 43 that developed in the bottom of roadside ditches originally cut in upland may be incidental and are anticipated to be out of the scope of the WCA.
[4] Of the total impact amount, 3.47 acres of wetland may be regulated under the CWA; a request for a jurisdictional determination on 2.56 acres of wetland in the project area has been submitted to the USACE.
[5] Of the total wetland impact amount, 5.67 acres of wetland within the project area are anticipated to be within the scope of the WCA; the remaining 0.35 acres of wetland in the project area may be considered incidental.

5.4.2.1 Source of Fill

The source of fill material will be determined by the successful contractor. The type of fill material is clean granular soils for embankment and salvaged topsoil from within the project limits. If fill material is needed beyond what is available on site, special provisions 1602 and 1701 apply, as described in **Appendix D**.

5.5 Proposed Mitigation

Compensatory mitigation for impacts to wetlands is proposed through debit of credits from an established wetland mitigation bank. The preliminary amount of credit to be withdrawn is 5.67 credits; this amount will be refined after the Level 2 wetland delineation is complete in spring 2015. This is a state project for which MnDOT is providing replacement using wetland credits already in the MnDOT Wetland Banks already established for MnDOT-specific projects. Credits would be debited from BSA 1 as a first priority. If sufficient credits are not available in BSA 1, the remainder of credits would be debited from established wetland mitigation banks in other bank service areas. MnDOT anticipates that the MnDOT WCA administrator will notice the TEP and USACE with proposed mitigation banks. A summary of wetland replacement needs is included in **Table 3** below.

The current minimum wetland replacement ratio for wetland credits is 1:1 for WCA regulated impacts and 1:1 for USACE regulated impacts on MnDOT road projects in the greater than 80% pre-settlement wetlands remaining area of the state. This minimum ratio applies if replacement is in the same Bank Service Area (BSA) as the impact, and would increase to 1.25:1 for the USACE and 1.5:1 for WCA if replaced outside the BSA. At the time of permitting, it is MnDOT's intent to use the closest appropriate USACE-approved MnDOT wetland bank credits for the wetland mitigation requirement.

5.5.1 Agency Requirements

5.5.1.1 U.S. Army Corps of Engineers

A total of eight (8) wetlands in the project area may not to be under the jurisdiction of the U.S. Army Corps of Engineers, because of their eventual connectivity and outlet to the Rouchleau Pit, which may not be considered a waters of the U.S. A request for an approved jurisdictional determination was submitted to the USACE under separate cover. Wetland replacement is proposed for wetlands within the USACE jurisdiction.

For the remaining 10 wetlands in the project area that have surficial connectivity to Manganika Lake, it is presumed these wetlands would be jurisdictional by the USACE. It is estimated that 3.47 acres of these 10 wetlands would be impacted by the project, and therefore would require replacement.

MnDOT anticipates wetland replacement for impacts within the >80% area of the state would be replaced within the same BSA as the impacts if credits are available; this would allow for the project to be eligible for a replacement ratio of 1:1. However, if MnDOT Wetland Bank credits are not available in BSA 1 at the time credits are debited, the replacement ratio could increase to 1.25:1. The amount of wetland credits that will be required for the Clean Water Act Section 404 permit will be determined following review and approval of the Jurisdictional Determination request, which is being submitted under separate cover.

Wetland replacement proposed to fulfill USACE requirements is summarized in **Table 3** below.

5.5.1.2 Wetland Conservation Act – MnDOT

Wetlands in the project area are under the jurisdiction of the WCA, with the exception of two basins (Wetlands 30 and 43) totaling 0.38 acres of roadside ditch. Areas of roadside ditch cut wholly in upland and having upland backslopes, but have since developed wetland characteristics have been considered "incidental wetlands" in other transportation projects, and therefore outside the scope of the WCA (MN Administrative Rule, 8420.0105 Subp. 2.D). Therefore, no replacement is proposed for these wetlands under the WCA.

MnDOT anticipates that 5.67 acres of wetland impact will require replacement under the WCA. For replacement of impacts within the >80% area of the state, and replacement within the same BSA as the impacts, the project is eligible for a replacement ratio of 1:1. If MnDOT Wetland Bank credits are not available in BSA 1 at the time credits are debited, the replacement ratio would increase to 1.5:1, requiring a debit of 8.51 credits.

Wetland replacement proposed to fulfill WCA requirements is summarized in **Table 3** below.

5.5.1.3 Wetland Replacement Summary

Proposed wetland replacement to fulfill both WCA and USACE requirements is summarized in **Table 3** below. It is anticipated that a debit of 5.67 to 8.51 credits (depending on availability of credits within the same BSA as the impact) would satisfy requirements of the USACE and the WCA.

Table 3
Proposed Wetland Mitigation Summary

Wetland Regulatory Authority	Preliminary Quantity of Wetland Impacts by Regulatory Authority	Proposed Mitigation Ratio [1]	Total Credits to be Debited (Proposed)
USACE jurisdiction	3.47 acres [2]	1:1 to 1.25:1	3.47 to 4.34
WCA jurisdiction	5.67 acres [3]	1:1 to 1.5:1	5.67 to 8.51

[1] The lower mitigation ratio presented here applies to bank credits debited within the same BSA as the impact. If credits are not available within the same BSA, the ratio is anticipated to increase.

[2] Of the total wetland impact amount, 3.47 acres of wetland may be regulated under the CWA; a request for a jurisdictional determination on 2.56 acres of wetland in the project area has been submitted to the USACE.

[3] Of the total wetland impact amount, 5.67 acres of wetland within the project area are anticipated to be within the scope of the WCA; the remaining 0.35 acres of wetland in the project area may be considered incidental.

5.5.2 Erosion Control and Best Management Practices

Best Management Practices (BMPs) will be employed throughout the project to ensure that erosion and sedimentation are minimized and are confined within the project limits. These practices are required to ensure that the proposed impacts are accurate, and that there are no unintended discharges of material outside of the construction limits.

5.6 Permitting

5.6.1 U.S. Army Corps of Engineers

This permit application is a request for issuance of a **Public Notice** of the project for a transportation road. A copy of the Joint Application Form for Activities Affecting Water Resources in Minnesota is included at the front of this report.

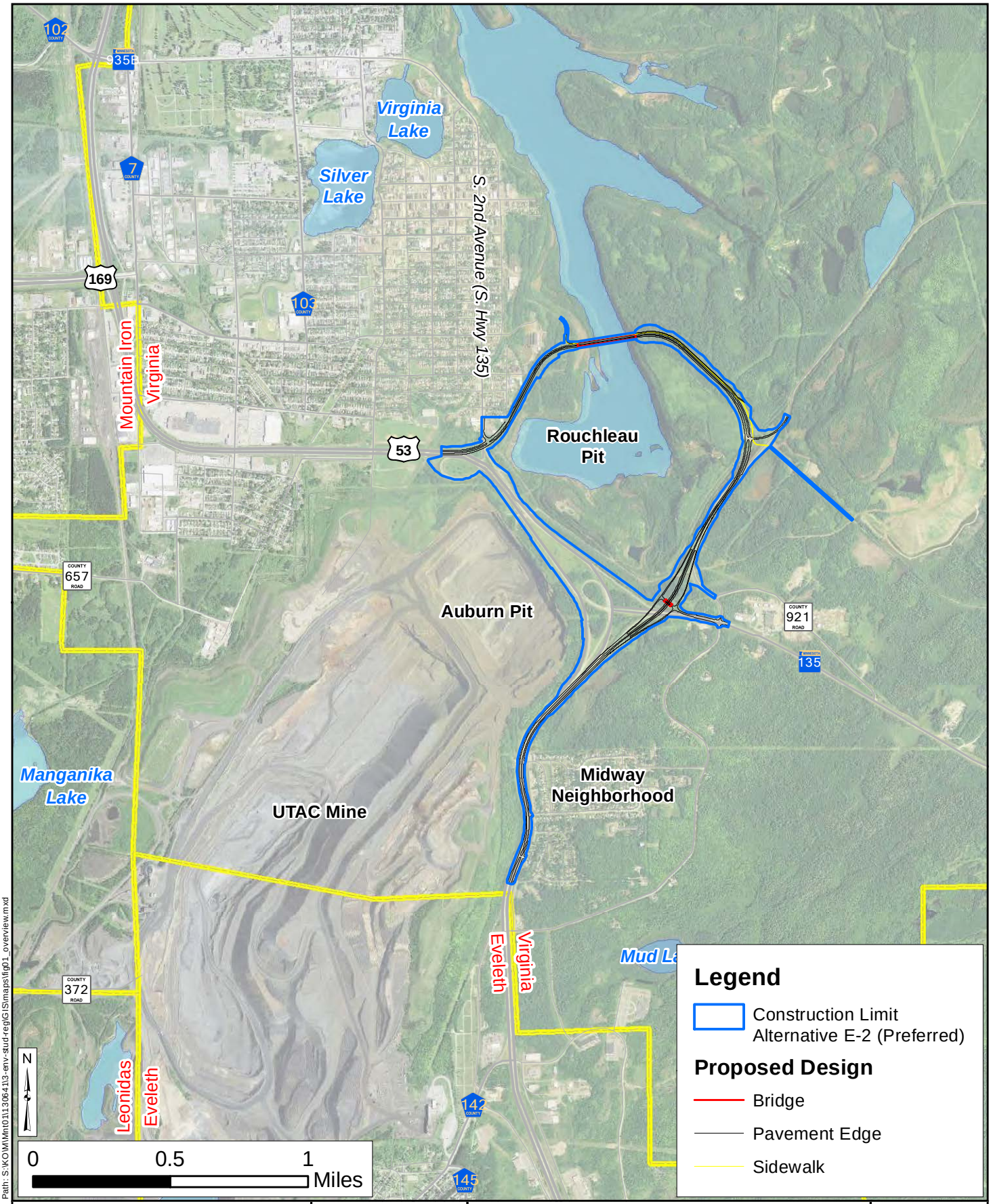
This project may be eligible for a Clean Water Act Letter of Permission for impacts to less than five (5) acres of jurisdictional wetlands and/or aquatic resources for a transportation project in Minnesota. A request for a Jurisdictional Determination for select wetlands/aquatic resources in the project area has been submitted to the USACE under separate cover.

Upon completion of the Level 2 wetland delineation in spring 2015, a supplemental submittal will be provided that refines the wetland impacts to jurisdictional wetlands and/or aquatic resources to support a request for a Letter of Permission for the project.

5.6.2 Wetland Conservation Act – MnDOT

MnDOT is responsible for administration of the WCA in the project area. This permit application is a request for **preliminary sequencing decision** under the rules of the Minnesota Wetland Conservation Act of 1991. A copy of the Minnesota Local/State/Federal Application Form for Water/Wetland Projects is included at the beginning of this document. . Upon completion of the Level 2 wetland delineation in spring 2015, a supplemental submittal will be provided that refines the wetland impacts in anticipation of a request for a **replacement plan decision** for the project.

List of Figures



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Legend

Construction Limit
Alternative E-2 (Preferred)

Proposed Design

Bridge
Pavement Edge
Sidewalk

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TF: (888) 722.0547
www.sehinc.com

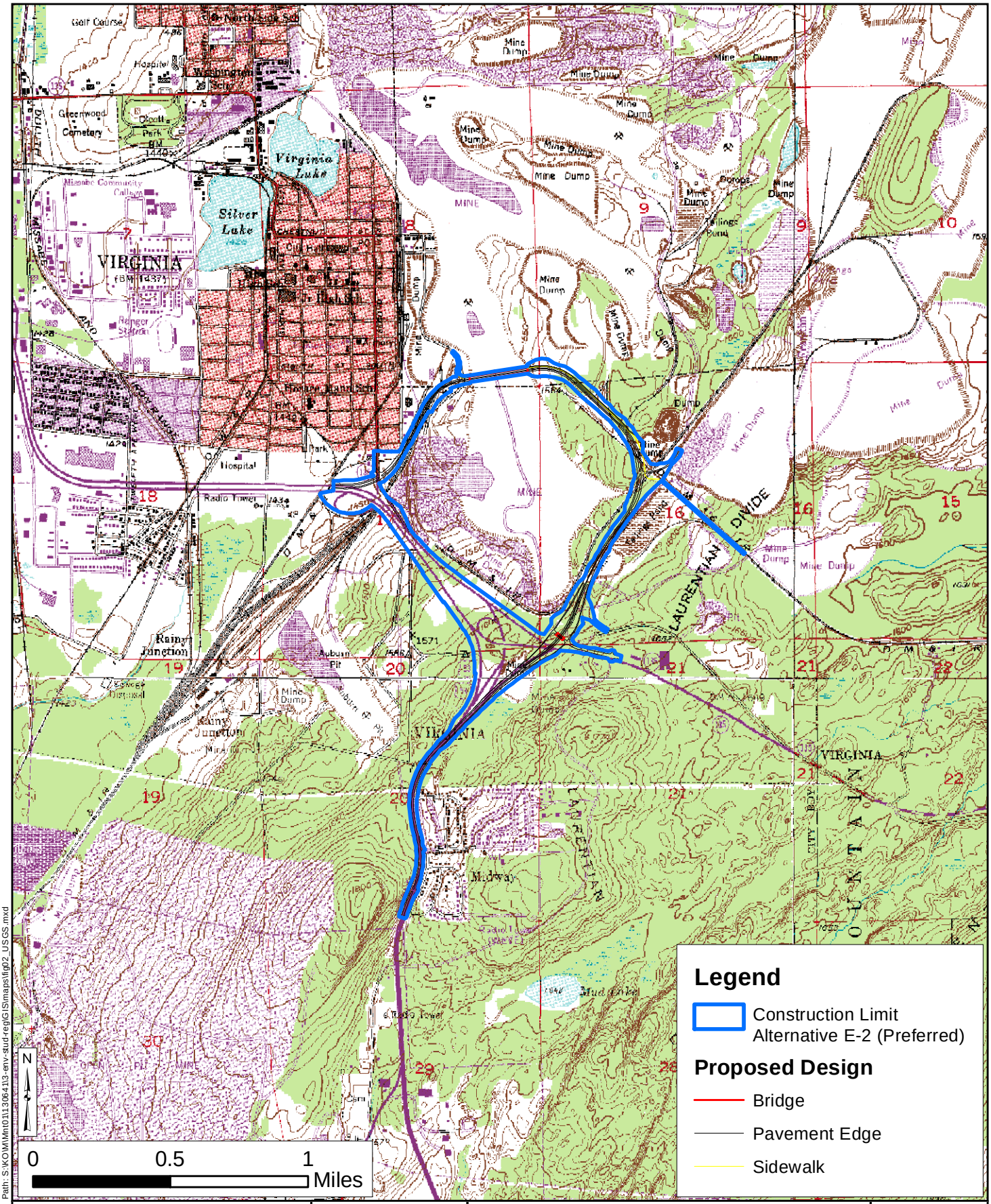
Project: MNT01 130641
Print Date: 2/12/2015

Map by: bpt
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: N/A

Project Overview Map

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 1



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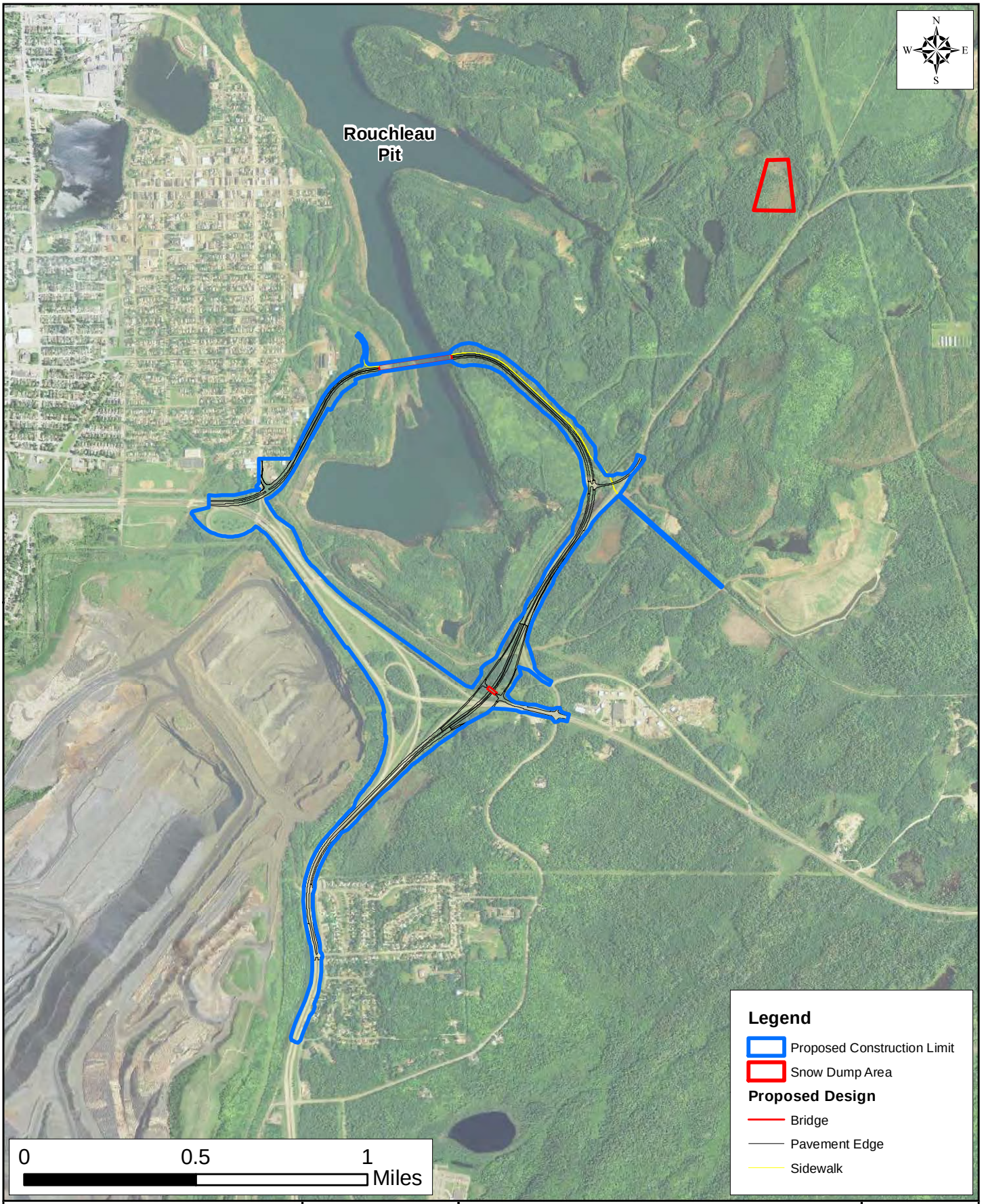
Map by: bpt
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: USGS 24k Topo

Project Location Map (USGS)

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 2



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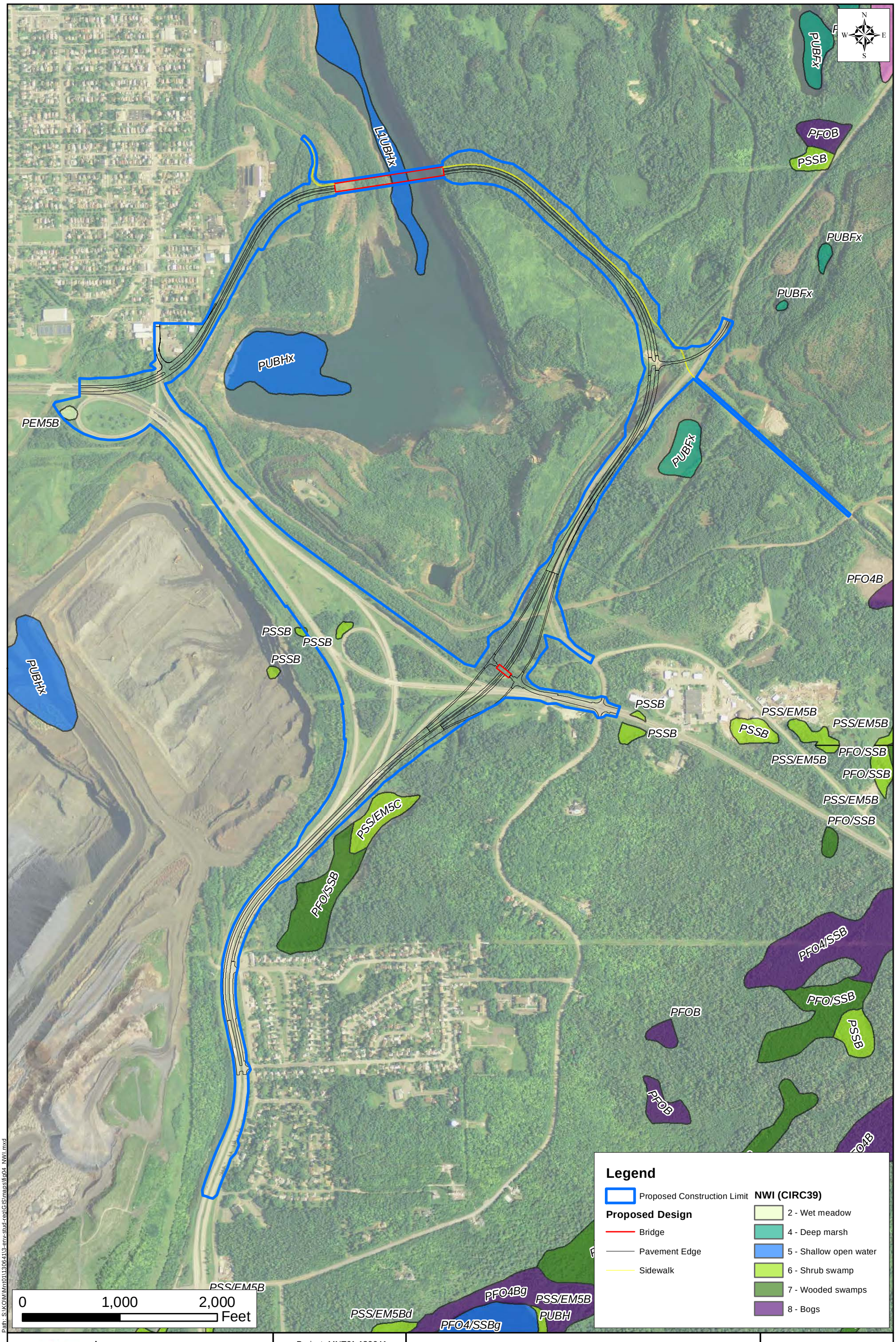
Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

SNOW DUMP AREA

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 3



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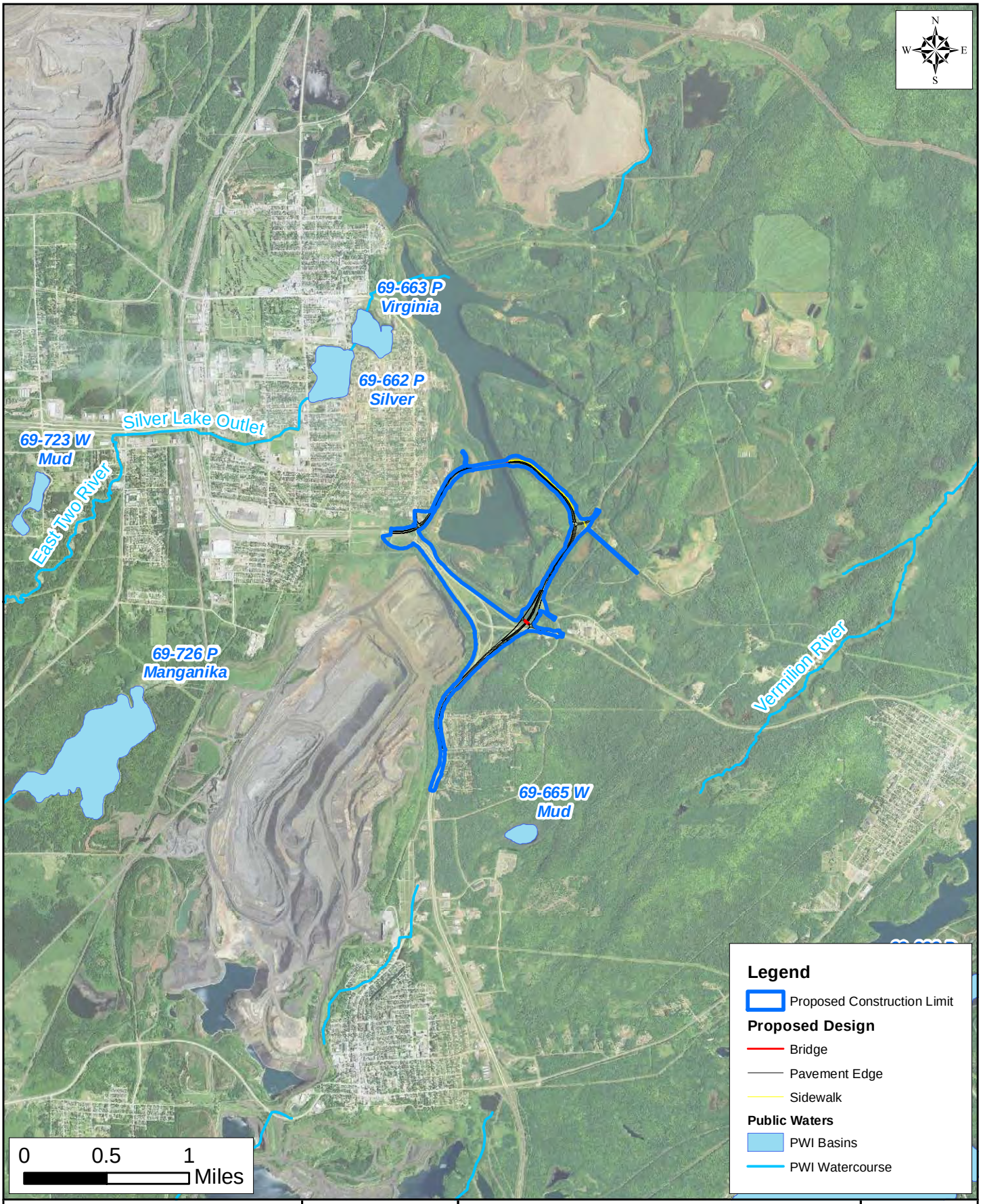
Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

National Wetlands Inventory

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 4



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Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

MNDNR PWI

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 5

Symbol	Map Unit Name	Symbol	Map Unit Name
1003B	Udorthents, loamy (cut and fill land)	F12B	Eaglesnest-Babbitt complex, 1 to 8 % slopes, bouldery
1007	Udorthents, shallow (sanitary landfill)	F13A	Babbitt, bouldery-Aquepts, rubbly, complex, 0 to 3 % slopes
1020A	Bowstring and Fluvaquents, loamy, 0 to 2 % slopes, frequently flooded	F14D	Eveleth stony loam, 8 to 18 % slopes, bouldery
1021A	Rifle soils, 0 to 1 % slopes	F17A	Aquepts, 0 to 2 % slopes, rubbly
1048	Dumps, iron mine	F1C	Eaglesnest stony loam, 4 to 12 % slopes, very bouldery
1049	Pits, iron mine	F2B	Eaglesnest-Wahlsten complex, 2 to 8 % slopes, bouldery
1050	Tailings basin	F30G	Conic, very bouldery-Insula, very bouldery-Rock outcrop complex, 20 to 70 % slopes
B27A	McQuade-Buhl complex, 0 to 3 % slopes	F34A	Cathro muck, depressional, 0 to 1 % slopes
B29B	Hibbing-Buhl complex, 1 to 8 % slopes	F35D	Eveleth, bouldery-Conic, bouldery-Aquepts, rubbly, complex, 0 to 18 % slopes
B33A	McQuade-Fayal, depressional complex, 0 to 2 % slopes	F3D	Eveleth-Eaglesnest-Conic complex, 6 to 18 % slopes, bouldery
B52A	Dora muck, depressional, Hibbing catena, 0 to 1 % slopes	F4E	Eveleth-Conic, bouldery-Rock outcrop complex, 18 to 30 % slopes
B53A	Dora mucky peat, Hibbing catena, 0 to 1 % slopes	F5B	Babbitt, bouldery-Wahlsten, bouldery-Aquepts, rubbly, complex, 0 to 8 % slopes
B63B	Urbanland-McQuade-Buhl complex, 0 to 12 % slopes	GP	Pits, gravel-Udipsamments complex
B67A	Rifle soils, Hibbing catena, 0 to 1 % slopes	M-W	Water, miscellaneous
F11B	Eaglesnest stony loam, 2 to 8 % slopes, bouldery	W	Water

Legend

Proposed Construction Limit

Proposed Design

Bridge

Pavement Edge

Sidewalk

SSURGO Hydric Rating

All hydric

Partially hydric

Unknown (Water/Disturbed)

Not hydric

0 1,000 2,000 Feet

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Project: MNT01 130641
Print Date: 2/12/2015

Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc, NRCS
Background: 2013 FSA

Soil Survey (SSURGO) Map

TH 53 Relocation Project

St. Louis County, Minnesota

Figure 6

N
W E
S

0 500 1,000
Feet

Legend

- Proposed Construction Limit
- White Line — 10-ft Lidar Contour (2009)

Proposed Design

- Bridge
- Pavement Edge
- Sidewalk

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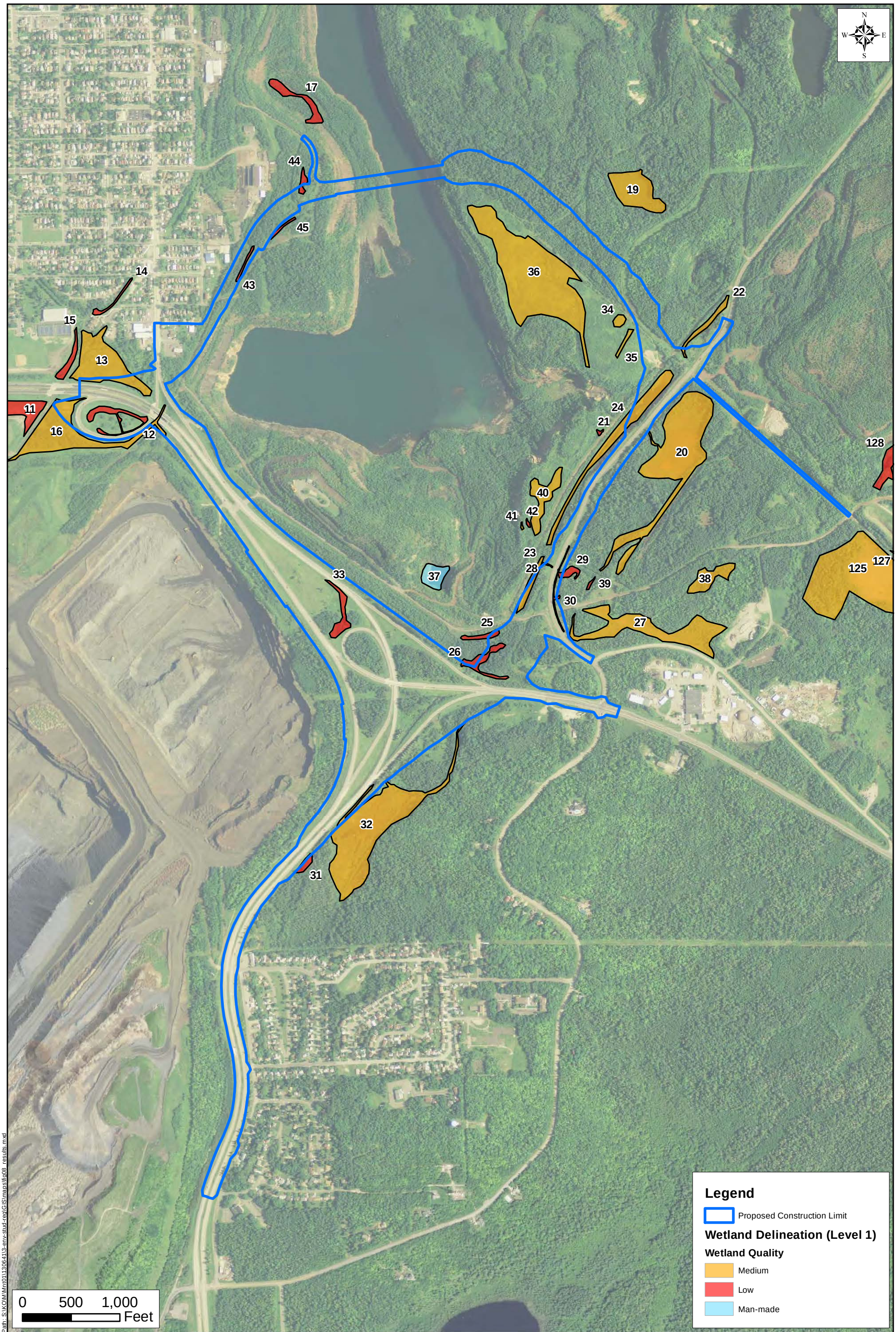
Project: MNT01 130641
Print Date: 2/12/2015

Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

2009 MNDNR Lidar (10-ft Contours)

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 7



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Project: MNT01 130641
Print Date: 2/12/2015

Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

Wetland Delineation Results

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 8

*** Notes:**
- Wetlands 12 and 33 are within the project construction limit but will not be impacted. These wetlands occur in an area where the existing TH 53 is proposed to be obliterated and no additional construction would take place. Therefore, impacts to Wetlands 12 and 33 are able to be avoided.
-Bridge abutments adjacent to the Rouchleau Pit will be above or notched into the pit wall. Impacts to the open water area of the pit will be avoided.

N
W E
S

Wetland 44
Impact 8 sf

Wetland 44
Impact 0.09 ac.

Wetland 43
Impact 0.18 ac.

Wetland 13
Impact 1.04 ac.

Rouchleau Pit*

Wetland 22
Impact 0.06 ac.

Wetland 16
Impact 0.27 ac.

Wetland 24
Impact 1.71 ac.

Wetland 12*

Wetland 28
Impact 0.02 ac.

Wetland 16
Impact 0.82 ac.

Wetland 29
Impact 0.05 ac.

Wetland 23
Impact 0.45 ac.

Wetland 25
Impact 0.11 ac.

Wetland 30
Impact 0.19 ac.

Wetland 33*

Wetland 32
Impact 0.27 ac.

Wetland 26
Impact 0.70 ac.

Wetland 32
Impact 0.01 ac.

Wetland 32
Impact 0.01 ac.

Wetland 32
Impact 3 sf

Wetland 31
Impact 0.06 ac.

0 500 1,000
Feet

Legend
- Proposed Construction Limit
- Wetland Delineation (Level 1)
- Proposed Wetland Impacts

Proposed Design
- Bridge
- Pavement
- Shoulder
- Sidewalk

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Project: MNT01 130641
Print Date: 2/17/2015

Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

Preliminary Wetland Impacts

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 9

Legend

- Proposed Construction Limit
- Proposed Wetland Impacts
- Flow Path Lines
- HUC 02 Watersheds

Proposed Design

- Bridge
- Pavement Edge
- Sidewalk

Existing Features

- Drain Pipe
- Manmade Feature

N
W E
S

17
44
45
43
22
13
Rouchleau Pit
24
16
12
29
28
33
37
23
30
25
26
32
31

0 500 1,000 Feet

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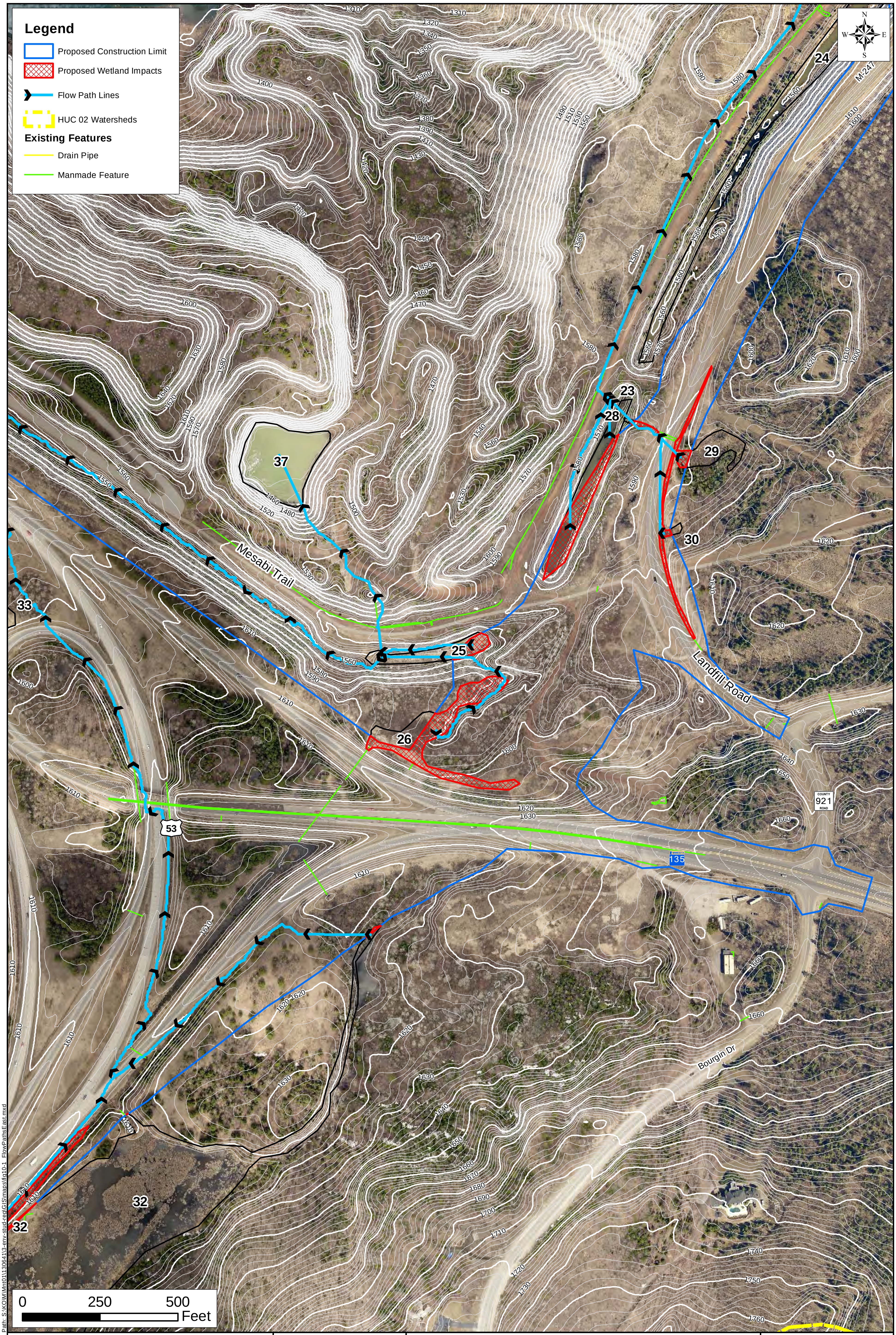
Project: MNT01 130641
Print Date: 2/17/2015

Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 FSA

Flow Path Analysis

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 10



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SEH

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Map by: btolcser
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: 2013 St. Louis County

Flow Path Analysis - East Area

TH 53 Relocation Project
St. Louis County, Minnesota

Figure
10-1

TH 53 Relocation Project

State Project No.: SP 6918-80

Wetland Permit Application
Volume II: Replacement Plan

MnDOT District 1

ST. LOUIS COUNTY, MINNESOTA

SEH No. MNT01 130641

June 29, 2015

Joint Application Form for Activities Affecting Water Resources in Minnesota

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: MnDOT District 1,
Robert Ege, District Traffic Engineer
Mailing Address: 1123 Mesaba Ave, Duluth, MN 55811
Phone: 218-725-2788
E-mail Address: Robert.Ege@state.mn.us

Authorized Contact (do not complete if same as above): Allyz Kramer, SEH Sr. Biologist | Project Manager
Mailing Address: 418 W Superior St, Suite 200, Duluth MN 55802
Phone: 218-279-3011
E-mail Address: akramer@sehinc.com

Authorized Contact: Natalie White, SEH Biologist
Mailing Address: 418 W Superior St, Suite 200, Duluth MN 55802
Phone: 218-279-3003
E-mail Address: nwhite@sehinc.com

PART TWO: Site Location Information

County: St. Louis **City/Township: City of Virginia**
Parcel ID and/or Address: Approximate 1.5 mile corridor of TH 53 from Cuyuna Dr to 2nd Ave W in Virginia
Legal Description (Section, Township, Range): Portions of Sections 8, 9, 16, 17, 20, 21; T58N; R17W
Lat/Long (decimal degrees): 47.5026, -92.5177
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 8000 ft

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

See attached narrative (purpose and need in Section 2.3 of Volume I)

PART FOUR: Aquatic Resource Impact[1] Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]
See Table 3 starting on Page 6 of the attached narrative. Total 14.61 acres of wetland and aquatic resource impact (9.77 acres WCA jurisdiction and 8.00 acres USACE jurisdiction)							

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each: N/A

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: Patrick W. Hustad Date: 6.26.15

I hereby authorize Allyz Kramer, SEH to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

[1] **The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.**

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☒ **Wetland Type Confirmation**

FOR WCA TEP CONCURRENCE (Concurrence from USACE – St. Paul District received June 1, 2015)

☒ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

FOR WCA TEP CONCURRENCE (Concurrence from USACE – St. Paul District received June 1, 2015)

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

Attachment B
Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part ***if*** you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR ***if*** you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

We anticipate several wetlands are isolated and not under CWA jurisdiction (see Section 3.2 on Page 4 of the attached narrative). A request to the USACE – St. Paul District for an approved jurisdictional determination has been submitted under separate cover.

We anticipate several wetlands have developed due to human disturbance not intended to create wetlands (e.g., wetlands developed on old mine tailings basins or in roadside ditches cut in upland) and are out of scope of the WCA (see Sections 3.1 on Page 3 of the attached narrative). (M.R. 8420.0105, Subp. 2.D.)

We anticipate several wetlands will have temporary disturbance when existing utilities and culverts/storm sewer along the roadway are removed as part of the road obliteration. The roadway to be removed in the existing roadway easement area will have pavement obliteration only; no permanent wetland impacts are proposed by this project in the existing easement area. Trenches excavated for utility removal will be closed and stabilized. Trenches excavated for culvert/storm sewer removal will remain open and be stabilized with seeding. Erosion control blanket will be installed on areas with slopes greater than 4:1. It is anticipated that *no loss of wetlands* will occur due to temporary disturbance for utility and culvert/storm sewer removal. (M.R. 8420.0415, F.)

Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

See Sections 3.2 on Page 4 of the attached narrative. A request for an approved jurisdictional determination with additional supporting information has been submitted and is currently in process.

Attachment C
Avoidance and Minimization

Project Purpose, Need, and Requirements. Clearly state the purpose of your project and need for your project. Also include a description of any specific requirements of the project as they relate to project location, project footprint, water management, and any other applicable requirements. Attach an overhead plan sheet showing all relevant features of the project (buildings, roads, etc.), aquatic resource features (impact areas noted) and construction details (grading plans, storm water management plans, etc.), referencing these as necessary:

See Section 2.3 of Volume I of the permit application

Avoidance. Both the CWA and the WCA require that impacts to aquatic resources be avoided if practicable alternatives exist. Clearly describe all on-site measures considered to avoid impacts to aquatic resources and discuss at least two project alternatives that avoid all impacts to aquatic resources on the site. These alternatives may include alternative site plans, alternate sites, and/or not doing the project. Alternatives should be feasible and prudent (see MN Rules 8420.0520 Subp. 2 C). Applicants are encouraged to attach drawings and plans to support their analysis:

See Section 5.4.1 of Volume I of the permit application

Minimization. Both the CWA and the WCA require that all unavoidable impacts to aquatic resources be minimized to the greatest extent practicable. Discuss all features of the proposed project that have been modified to minimize the impacts to water resources (see MN Rules 8420.0520 Subp. 4):

See Section 5.4.1 of Volume I of the permit application

Off-Site Alternatives. An off-site alternatives analysis is not required for all permit applications. If you know that your proposal will require an individual permit (standard permit or letter of permission) from the U.S. Army Corps of Engineers, you may be required to provide an off-site alternatives analysis. The alternatives analysis is not required for a complete application but must be provided during the review process in order for the Corps to complete the evaluation of your application and reach a final decision. Applicants with questions about when an off-site alternatives analysis is required should contact their Corps Project Manager.

Alternative alignments of the project are discussed in Section 3.2 of Volume I of the permit application

Attachment D
Replacement/Compensatory Mitigation

Complete this part ***if*** your application involves wetland replacement/compensatory mitigation not associated with the local road wetland replacement program. Applicants should consult Corps mitigation guidelines and WCA rules for requirements.

Replacement/Compensatory Mitigation via Wetland Banking. Complete this section if you are proposing to use credits from an existing wetland bank (with an account number in the State wetland banking system) for all or part of your replacement/compensatory mitigation requirements.

This is a state project for which MnDOT is providing replacement using wetland credits already in the MnDOT Specific Wetland Mitigation Banks. The replacement of WCA impacts will be at a ratio of 1:1 for replacement within the impact BSA. The replacement of USACE impacts is proposed at a 1:1 ratio for replacement in advance (bank credits) and in place (within the impact BSA).

Wetland Bank Account #	**County**	**Major Watershed #**	**Bank Service Area #**	**Credit Type** (if applicable)	**Number of Credits**
1595 (U of MN Fens)	St. Louis	3 (St. Louis River)	1	standard wetland credit	9.05

Applicants should attach documentation indicating that they have contacted the wetland bank account owner and reached at least a tentative agreement to utilize the identified credits for the project. This documentation could be a signed purchase agreement, signed application for withdrawal of credits or some other correspondence indicating an agreement between the applicant and the bank owner. *However, applicants are advised not to enter into a binding agreement to purchase credits until the mitigation plan is approved by the Corps and LGU.*

Wetland Permit Application
TH 53 Relocation Project
MnDOT District 1
Virginia, Minnesota

SEH No. MNT01 130641

June 29, 2015

I hereby certify that this Wetland Permit Application was prepared by me. The procedures and field methods used to delineation wetlands within the area of interest constitute an official wetland delineation in accordance with the 1987 U.S. Army Corps of Engineers *Wetlands Delineation Manual* and applicable *Regional Supplement*.

Prepared by: _____ June 29, 2015
Natalie White, Biologist — Date
Minnesota Certified Wetland Delineator, No. 1226
Professional Wetland Scientist, No. 2488

Reviewed by: _____ June 29, 2015
Allyz Kramer, Sr. Biologist | Project Manager — Date
Minnesota Certified Wetland Delineator, No. 1023
Professional Wetland Scientist, No. 1884

Reviewed by: _____ June 29, 2015
Deric Deuschle, Sr. Biologist | QA/QC Manager — Date
Minnesota Certified Wetland Delineator, No. 1009

Short Elliott Hendrickson Inc.
418 West Superior Street
Duluth, MN 55802-1512
218.279.3000

SEH

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Wetland Permit Application
Volume II: Replacement Plan
TH 53 Relocation Project

Prepared for MnDOT District 1

1.0 Introduction

Volume II of this Wetland Permit Application is submitted on behalf of the Minnesota Department of Transportation (MnDOT) District 1. The application has been prepared to describe the mitigation of wetland impacts resulting from the construction of the relocated Trunk Highway 53 (TH 53) due to the termination of the existing roadway easement agreement that allows TH 53 to cross mineral rights held by RGGS Land and Minerals Co. (hereafter referred to as "RGGS") and Cliffs Natural Resources Inc.-owned, United Taconite, LLC (herein referred to as "UTAC"). The existing roadway easement area is located between the Virginia's "Midway" neighborhood and the remainder of the city. The project location is shown in **Figure 1**. The project is described and evaluated in the Draft Environmental Impact Statement (EIS), which was published in December 2014. The Final EIS was published on June 22, 2015 and comments are currently being accepted through July 6, 2015.

The initial Wetland Permit Application, without Replacement Plan, was submitted in March 2015 and described the project purpose and need, alternatives considered, and wetland impact avoidance and minimization. For purposes of clarity in this document, we refer to this initial March 2015 submittal of the Wetland Permit Application as "Volume I". It contained an application for a Preliminary Sequencing Determination under Minnesota Rules (M.R. 8420.0325) for the Minnesota Wetland Conservation Act (WCA). It also served as the application for the U.S. Army Corps of Engineers (USACE) to issue a Public Notice of the project following their procedures in administering Section 404 of the Clean Water Act.

Volume I of the Wetland Permit Application (March 2015) included estimated wetland impacts based on Level 1 delineation (remote sensing with visual review of selected wetlands) used for preparation of the Draft EIS. In April and May 2015, Level 2 field delineation of all wetlands in the project area has since been completed (**Appendix A**). Unavoidable wetland impacts are now estimated based on the results of the Level 2 delineation. This Wetland Replacement Plan (Volume II) summarizes the delineated wetlands, describes the unavoidable wetland and aquatic resource impacts, and proposed replacement for these impacts.

The proposed project will result in temporary and permanent impacts to wetland habitat for construction of the new roadway alignment. This permit application will be used to request an **Individual Permit** under Section 404 of the Clean Water Act and a Wetland Conservation Act (WCA) **Replacement Plan** approval for temporary and permanent impacts to wetlands.

1.1 Combined NEPA and Clean Water Act Section 404 Permitting Process

The Federal Highway Administration (FHWA) and MnDOT have coordinated with the U.S. Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) to merge the National Environmental Policy Act (NEPA) and Clean Water Act Section 404 Permitting processes into one process. Concurrence has been reached on Points #1 through #3, as described in Volume 1 (March 2015) of this permit application. Concurrence on Point #4 (proposed mitigation) is anticipated through review of this proposed replacement plan for wetland impacts and will follow the Record of Decision (ROD) for the Final EIS. Proposed mitigation for wetlands impacted by the TH 53 Relocation Project is discussed in more detail in **Section 4.1** below.

2.0 Wetland

2.1 Wetlands Definition and Delineation Methodology

Wetlands are defined in federal Executive Order 11990 as *"areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation or aquatic life typically adapted for saturated soil conditions."*

Field delineation to determine presence of wetlands in the project area was performed on April 30, May 1, May 4-8, and May 13, 2015 to identify and delineate any areas meeting the wetland criteria in accordance with the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2012). One positive indicator (except in certain situations) from each of three elements must be present in order to make a positive wetland determination, which are as follows:

- Greater than 50 percent dominance of hydrophytic plant species.
- Presence of hydric soil.
- The area is either permanently or periodically inundated, or soil is saturated to the surface during the growing season of the dominant vegetation.

The Routine Onsite Determination Method was applied for this delineation, in combination with available data from the Level 1 delineations. A more detailed discussion of the delineation methodology is included in the Wetland Delineation Report, included as **Appendix A** (on CD).

The delineation identified 80 wetland basins within the project area and three (3) deep, water filled pits associated with past mining activity (**Appendix A**). The delineated wetland boundaries for the project are shown on **Figure 2** (overview) and **Figures 2-1** through **2-17** (details). The following section describes the wetland delineation results in the project area.

2.2 Results

A total of 80 wetland basins comprised of a variety of wetland plant communities were found in the project area. Two (2) deep-water pits in the project area also had some fringe areas of wetland (see the Wetland Delineation Report, **Appendix A**). A third deep water documented is the Rouchleau Pit – a deep, water-filled depression that has developed due to past mining activities. A summary of wetland and aquatic resources by wetland type is included in **Table 1** and **Table 2** below. Site meetings with agency representatives took place on May 28, 2015 and June 3, 2015. Representatives from the USACE and WCA TEP verbally approved the wetland boundaries as marked in the field and submitted in a draft wetland delineation report. Written concurrence on the wetland boundaries and classification was provided by the

USACE on June 1, 2015. Correspondence regarding wetland boundary reviews and/or approvals is included in the Wetland Delineation Report (**Appendix A**).

Table 1
Wetland Characteristics

Eggers & Reed Classification	Circular 39 / Cowardin Classification	Size (acres)[1]
Fresh (Wet) Meadow	Type 2 / PEMB	6.24
Sedge Meadow	Type 2 / PEMB	0.07
Shallow Marsh	Type 3 / PEMC	8.14
Shallow Open Water	Type 5 / PUBF	0.94
Shrub-Carr	Type 6 / PSS1B	44.81
Alder Thicket	Type 6 / PSS1B	0.21
Hardwood Swamp	Type 7 / PFO1B	7.95
Coniferous Swamp	Type 7 / PFO4B	1.27
Total Wetland Area Delineated within Project Limits (acres)		**69.64**

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

Table 2
Aquatic Resource Characteristics

Eggers & Reed Classification	Circular 39 / Cowardin Classification	Size (acres)[1]	Notes
Deep water habitat (non-wetland)	N/A	298.32	Rouchleau Pit and two deep water “pit ponds”

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

3.0 Regulatory Jurisdiction

Wetlands in the project area are regulated by several agencies at the local, regional, state, and federal levels including the USACE and the EPA at the federal level; the Minnesota Board of Water and Soil Resources (BWSR) and the Minnesota Pollution Control Agency (MPCA) at the state level.

3.1 Minnesota Wetland Conservation Act

The City of Virginia is the Local Government Unit (LGU) for the WCA at the local level for lands not within MnDOT ROW or otherwise administered by the state. The City of Virginia WCA representative has indicated that it is acceptable for MnDOT to assume WCA administration in areas of the project currently under private ownership, where the City of Virginia would otherwise administer the WCA (see correspondence related to MnDOT assumption of WCA administration dated June 26, 2015, **Appendix A**).

MnDOT accepts responsibility for administration of the Minnesota Wetland Conservation Act (WCA) of 1991 in areas of MnDOT ROW. MnDOT will acquire the necessary ROW for this transportation project. MnDOT will work with the MNDNR on WCA administration duties for those portions of the project on school trust land or otherwise "state land" that will eventually become MnDOT ROW.

Historical aerial photographs were reviewed for details of past land use in the vicinity of the project. Wetlands in areas of extensive ground disturbance such as past mine dumps, mine excavations, rail yards, and tailings basins have developed due to human activity not intended to create wetlands, and may therefore be determined to be incidental and out of the scope of the WCA (M.R. 8420.0105, Subp. 2.D.). A total of 43 wetlands appear to have developed in such landscape features, or in the bottom of roadside ditches excavated in upland habitat. The remaining 37 wetland basins (of which 28 are proposed for impact) within the project area are presumed to be regulated in whole or in part by the WCA.

Historical aerial photographs showing past landscape disturbance are included as **Appendix B**. Some of these features are also visible on the USGS topographic map (**Figure 3**). A table summarizing the historical land use and landscape position of each basin, as well as the historical land use as assessed by the historical aerial photo review, is attached as **Appendix C**.

3.2 Clean Water Act Section 404

The USACE has determined that the Rouchleau Pit itself is not jurisdictional under Section 404 of the Clean Water Act (CWA). The Approved Jurisdictional Determination (AJD) for the Rouchleau Pit was issued on June 16, 2015 (see correspondence in **Appendix B**). MnDOT has since submitted an amended request for an AJD on those wetlands in the project area that are either 1) isolated; 2) have surficial connectivity (i.e., flow toward) the Rouchleau Pit; or, 3) have surficial connectivity (i.e., flow toward) to the Thunderbird Mine/Auburn Pit. This request for an AJD was submitted to the USACE – St. Paul District on June 22, 2015. The USACE – St. Paul District is currently reviewing this request.

A total of 36 wetlands (of which 27 are proposed for impacts) within the project area have surficial connectivity to Manganika and Mud Lakes outside of the project area, and are anticipated to be regulated by Section 404 of the CWA. A table summarizing the hydrologic catchment area and landscape position of each wetland and aquatic resource is attached as **Appendix C**.

4.0 Wetland Impacts

Wetlands in the project area are proposed to be impacted for permanent roadway fill and excavation on the new TH 53 alignment and permanent fill to provide connections to the Mesabi Trail (a multi-use trail operated by the St. Louis County Regional Rail Authority). Temporary wetland impacts will occur due to excavation for removing existing utilities and culverts/storm sewer in the existing roadway easement area.

Proposed impacts for trail connections consist of permanent fill. Eventual reroute of the Mesabi Trail is a separate and complete project to be undertaken by others. The proposed TH 53 alignment has been designed considering eventual trail connections by others, so these connections are not made impossible or impractical by the new TH 53 design. At the eastern trail connection, the proposed project will complete a section of trail in order to connect to existing paved trail. This will replace the connection that will be removed by the

TH 53 relocation project. Further relocation of the trail itself will be necessary due to mining activities – this trail project has separate utility and will be designed and built by others.

The roadway to be removed in the existing roadway easement area will have pavement obliteration only; no permanent wetland impacts are proposed by this project in the existing easement area. Trenches excavated for utility removal will be closed and stabilized. Trenches excavated for culvert/storm sewer removal will remain open and be stabilized with seeding. Erosion control blanket will be installed on areas with slopes greater than 4:1. It is anticipated that no loss of wetlands will occur due to temporary disturbance for utility and culvert/storm sewer removal.

Wetland and aquatic resource impact locations are shown in overview on **Figure 4** and detail on **Figures 4-1** through **4-17**, and are summarized in **Table 3** below. Impacts are also shown on typical cross sections for each wetland, divided into impacts due to cut or fill (**Appendix D**).

Table 3
Wetland and Aquatic Resource Impact Summary

Basin ID[1]	Wetland Classification (Eggers and Reed)	Landscape Position[2]	Duration of Impact	Type of Impact	Wetland Impact Area (acres)	Wetland Impact Summary (acres) by Jurisdiction	
						WCA	USACE
1	Shrub-Carr	Portions incidental (wet roadside ditch in part); drains to Rouchleau Pit	Permanent	Cut	0.28	0.28	--
3	Shrub-Carr	Drains to Rouchleau Pit	Permanent	Cut	0.26	0.26	--
4	Shrub-Carr, Shallow Marsh	Incidental (manmade ravine near old mine dump); drains to Rouchleau Pit	Permanent	Cut	0.12	--	--
5	Fresh (Wet) Meadow	Portions incidental (wet roadside ditch in part); drains to Rouchleau Pit	Temporary	Cut	0.002 (76 ft^2)	0.002 (76 ft^2)	--
6	Hardwood Swamp	Drains to Rouchleau Pit	Permanent	Cut	0.12	0.12	--
7	Hardwood Swamp	Isolated	Permanent	Cut	0.02	0.02	--
8	Shrub-Carr	Drains to Rouchleau Pit	Permanent	Cut	0.65	0.65	--
			Temporary	Cut	0.22	0.22	--
9	Shrub-Carr	Incidental (wet roadside ditch); drains to Rouchleau Pit	Permanent	Fill	0.06	--	--
10	Shrub-Carr	Incidental (linear basin between road and mine dump); drains to Rouchleau Pit	Permanent	Fill	0.04	--	--
11	Shrub-Carr, Shallow Marsh	Incidental (wetland developed at margin of deep water pit pond); drains to Rouchleau Pit	Permanent	Fill	0.21	--	--
12	Shrub-Carr	Incidental (wetland developed at margin of deep water pit pond); drains to Rouchleau Pit	Permanent	Fill	0.10	--	--
14	Shrub-Carr	Incidental (tailings basin); drains to Rouchleau Pit	Permanent	Fill	0.04	--	--
			Permanent	Cut	0.40	--	--

1 All basins in project area are within St. Louis County, Major Watershed #3, and Bank Service Area #1.

2 "Incidental" landscape position indicates basins created by human activity not intended to create wetlands, and anticipated to be outside the scope of the WCA. Catchment areas listed indicate areas that may not be regulated by Section 404 of the Clean Water Act (Approved Jurisdictional Determination pending).

Table 3 (Continued)

Basin ID[1]	Wetland Classification (Eggers and Reed)	Landscape Position[2]	Duration of Impact	Type of Impact	Wetland Impact Area (acres)	Wetland Impact Summary (acres) by Jurisdiction	
						WCA	USACE
15	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Rouchleau Pit	Permanent	Fill	0.01	--	--
16	Shrub-Carr	Incidental (manmade ravine); drains to Rouchleau Pit	Permanent	Fill	0.19	--	--
17	Fresh (Wet) Meadow	Incidental (linear basin between road and pit pond); drains to Rouchleau Pit	Permanent	Fill	0.01	--	--
18	Fresh (Wet) Meadow, Shrub-Carr	Drains to Rouchleau Pit	Permanent	Fill	0.03	0.03	--
19	Shrub-Carr, Shallow Open Water, Shallow Marsh	Drains to Rouchleau Pit	Permanent	Fill	0.15	0.15	--
20	Shrub-Carr	Drains to Rouchleau Pit	Permanent	Fill	0.02	0.02	--
23	Shrub-Carr, Hardwood Swamp, Shallow Marsh	Portions incidental (wet roadside ditch in part); drains to Rouchleau Pit	Permanent	Fill	0.39	0.39	--
			Permanent	Cut	0.10	0.10	--
24	Hardwood Swamp, Coniferous Swamp	Drains to Rouchleau Pit	Permanent	Cut	0.01	0.01	--
26	Fresh (Wet) Meadow	Drains to Manganika Lake	Permanent	Fill	0.30	0.30	0.30
27	Hardwood Swamp	Drains to Manganika Lake	Permanent	Fill	0.15	0.15	0.15
28	Shrub-Carr	Drains to Manganika Lake	Permanent	Fill	2.02	2.02	2.02
			Temporary	Cut	0.004 (186 ft^2)	0.004	0.004
29	Shrub-Carr	Drains to Manganika Lake	Permanent	Fill	0.40	0.40	0.40
31	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Rouchleau Pit	Permanent	Fill	0.001 (57 ft^2)	--	--
33	Shallow Marsh	Incidental (wet roadside ditch); drains to Rouchleau Pit	Permanent	Cut	0.04	--	--

[1] All basins in project area are within St. Louis County, Major Watershed #3, and Bank Service Area #1.

[2] "Incidental" landscape position indicates basins created by human activity not intended to create wetlands, and anticipated to be outside the scope of the WCA. Catchment areas listed indicate areas that may not be regulated by Section 404 of the Clean Water Act (Approved Jurisdictional Determination pending).

Table 3 (Continued)

Basin ID[1]	Wetland Classification (Eggers and Reed)	Landscape Position[2]	Duration of Impact	Type of Impact	Wetland Impact Area (acres)	Wetland Impact Summary (acres) by Jurisdiction	
						WCA	USACE
34	Shallow Marsh	Incidental (wet roadside ditch); drains to Manganika Lake	Permanent	Cut	0.07	--	0.07
35	Fresh (Wet) Meadow	Drains to Manganika Lake	Permanent	Fill	1.26	1.26	1.26
36	Shallow Marsh	Portions incidental (wet roadside ditch in part); drains to Manganika Lake	Permanent	Fill	0.45	0.45	0.45
			Permanent	Cut	1.05	0.15	1.05
37	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Manganika Lake	Permanent	Cut	0.04	--	0.04
40	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Thunderbird Mine Pit	Permanent	Cut	0.02	--	--
41	Shallow Marsh	Incidental (wet roadside ditch); drains to Thunderbird Mine Pit	Temporary	Cut	0.69	--	--
			Permanent	Fill	0.03	--	--
43	Shallow Marsh	Incidental (wet roadside ditch); drains to Manganika Lake	Permanent	Fill	0.17	--	0.17
			Temporary	Cut	0.03	--	0.03
44	Shallow Marsh, Shallow Open Water	Portions incidental (wet roadside ditch in part); drains to Manganika Lake	Permanent	Cut	0.12	0.12	0.12
			Temporary	Cut	0.09	0.09	0.09
45	Sedge Meadow	Drains to Manganika Lake	Temporary	Cut	0.008 (354 ft^2)	0.008	0.008
47	Shrub-Carr	Drains to Manganika Lake	Temporary	Cut	0.002 (99 ft^2)	0.002	0.002

1 All basins in project area are within St. Louis County, Major Watershed #3, and Bank Service Area #1.

2 "Incidental" landscape position indicates basins created by human activity not intended to create wetlands, and anticipated to be outside the scope of the WCA. Catchment areas listed indicate areas that may not be regulated by Section 404 of the Clean Water Act (Approved Jurisdictional Determination pending).

Table 3 (Continued)

Basin ID[1]	Wetland Classification (Eggers and Reed)	Landscape Position[2]	Duration of Impact	Type of Impact	Wetland Impact Area (acres)	Wetland Impact Summary (acres) by Jurisdiction	
						WCA	USACE
48	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Manganika Lake	Temporary	Cut	0.01	--	0.01
51	Shrub-Carr	Drains to Manganika Lake	Temporary	Cut	0.01	0.01	0.01
53	Fresh (Wet) Meadow, Shrub-Carr	Portions incidental (wet roadside ditch in part); drains to Manganika Lake	Temporary	Cut	0.20	0.20	0.20
54	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Thunderbird Mine Pit	Temporary	Cut	0.05	--	--
55	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Manganika Lake	Temporary	Cut	0.04	--	--
57	Shrub-Carr, Shallow Marsh, Hardwood Swamp	Portions incidental (wet roadside ditch in part); drains to Manganika Lake	Temporary	Cut	0.16	0.16	0.16
58	Fresh (Wet) Meadow	Incidental (wet roadside ditch); drains to Manganika Lake	Temporary	Cut	0.01	--	0.01
59	Fresh (Wet) Meadow, Shallow Marsh	Portions incidental (wet roadside ditch in part); drains to Manganika Lake	Temporary	Cut	0.05	0.05	0.05
			Permanent	Fill	0.06	0.06	0.06
61	Shrub-Carr, Fresh (Wet) Meadow, Hardwood Swamp	Drains to Manganika Lake	Permanent	Fill	0.71	0.71	0.71
62	Shrub-Carr, Hardwood Swamp	Portions incidental (wet roadside ditch in part); drains to Manganika Lake	Permanent	Fill	0.20	0.15	0.20
63	Shallow Marsh	Incidental (manmade excavation); isolated	Permanent	Fill	0.03	--	--
64	Shrub-Carr	Incidental (wet roadside ditch); drains to Manganika Lake	Permanent	Fill	0.05	--	0.05
65	Shrub-Carr	Incidental (wet roadside ditch); drains to Manganika Lake	Permanent	Fill	0.02	--	0.02

[1] All basins in project area are within St. Louis County, Major Watershed #3, and Bank Service Area #1.

[2] "Incidental" landscape position indicates basins created by human activity not intended to create wetlands, and anticipated to be outside the scope of the WCA. Catchment areas listed indicate areas that may not be regulated by Section 404 of the Clean Water Act (Approved Jurisdictional Determination pending).

Table 3 (Continued)

Basin ID[1]	Wetland Classification (Eggers and Reed)	Landscape Position[2]	Duration of Impact	Type of Impact	Wetland Impact Area (acres)	Wetland Impact Summary (acres) by Jurisdiction	
						WCA	USACE
66	Shrub-Carr	Incidental (linear basin in old rail yard); drains to Manganika Lake	Permanent	Fill	0.09	--	0.09
			Permanent	Cut	0.08	--	0.08
67	Shrub-Carr	Incidental (linear basin in old rail yard); drains to Manganika Lake	Permanent	Cut	0.03	--	0.03
68	Shrub-Carr	Incidental (linear basin in old rail yard); drains to Manganika Lake	Permanent	Cut	0.01	--	0.01
69	Shrub-Carr	Incidental (linear basin in old rail yard); drains to Manganika Lake	Permanent	Fill	0.07	--	0.07
70	Hardwood Swamp	Incidental (linear basin in old rail yard); drains to Manganika Lake	Permanent	Cut	0.08	--	0.08
73	Shrub-Carr	Incidental (basin in old rail yard, surrounded by roads/trails); isolated	Permanent	Fill	0.04	--	--
74	Shrub-Carr	Incidental (basin in old rail yard, surrounded by roads/trails); isolated	Permanent	Cut	0.08	--	--
75	Shrub-Carr	Incidental (basin in old rail yard, surrounded by roads/trails); isolated	Permanent	Fill	0.09	--	--
76	Shrub-Carr, Hardwood Swamp	Incidental (basin in old rail yard, surrounded by roads/trails); drains to Rouchleau Pit	Permanent	Fill	0.28	0.28	--
Pit Pond 1	N/A (deep water non-wetland)	Non-wetland; drains to Rouchleau Pit	Permanent	Fill	1.38	--	--
Pit Pond 2	N/A (deep water non-wetland)	Non-wetland; drains to Rouchleau Pit	Permanent	Fill	0.31	--	--
Rouchleau Pit	N/A (deep water non-wetland)	Non-wetland; determined to be non-jurisdictional for CWA Section 404	Permanent	Fill	0.10	--	--
Total Temporary Impacts (acres)					**1.57**	**0.74**	**0.57**
Total Permanent Impacts (acres)					**13.04**	**9.03**	**7.43**
Grand Total Impacts (acres)					**14.61**	**9.77**	**8.00**

1 All basins in project area are within St. Louis County, Major Watershed #3, and Bank Service Area #1.

2 "Incidental" landscape position indicates basins created by human activity not intended to create wetlands, and anticipated to be outside the scope of the WCA. Catchment areas listed indicate areas that may not be regulated by Section 404 of the Clean Water Act (Approved Jurisdictional Determination pending).

A summary of impacts by wetland plant community for each regulatory jurisdiction is provided in **Table 4** and **Table 5** below.

Table 4
Summary of Impacts by Wetland Plant Community – USACE Jurisdiction

Wetland Plant Community (Eggers & Reed 2011)	Impacts (acres)	
	Permanent	Temporary
Fresh (Wet) Meadow	1.89	0.22
Sedge Meadow	--	0.01
Shallow Marsh	1.89	0.21
Shallow Open Water	0.03	0.09
Shrub-Carr	2.90	0.04
Hardwood Swamp	0.72	--
Coniferous Swamp	--	--
Non-Wetland (Deep Water)	--	--
Total	**7.43**	**0.57**

Table 5
Summary of Impacts by Wetland Plant Community – WCA Jurisdiction

Wetland Plant Community (Eggers & Reed 2011)	Impacts (acres)	
	Permanent	Temporary
Fresh (Wet) Meadow	1.88	0.20
Sedge Meadow	--	0.01
Shallow Marsh	2.04	0.18
Shallow Open Water	0.08	0.09
Shrub-Carr	3.94	0.26
Hardwood Swamp	1.08	--
Coniferous Swamp	0.01	--
Non-Wetland (Deep Water)	--	--
Total (acres)	**9.03**	**0.74**

4.1 Proposed Mitigation

Compensatory mitigation for permanent impacts to wetlands is proposed through debit of credits from an established wetland mitigation bank. MnDOT proposes to debit 9.03 credits from wetland bank #1595 (U of M Fens) located in St. Louis County, Major Watershed #3, Bank Service Area #1. Proposed wetland replacement is summarized by regulatory agency in **Table 6** below.

Because the debit of wetland credits is “in-place” (the wetland bank is in the same BSA as the impacts), “in-advance” (as a debit from an established wetland bank), and the project is within the >80% of pre-settlement wetland remaining area of the state, the impacts should be eligible for a mitigation ratio of 1:1. We presume that a debit of 9.03 credits will satisfy requirements of both the USACE (7.43 credits necessary at a 1:1 mitigation ratio) and the WCA (9.03 credits necessary at a 1:1 mitigation ratio).

Table 6
Summary of Wetland and Aquatic Resource Replacement Needs

Wetland Regulatory Authority	Quantity of Wetland Impacts by Regulatory Authority	Proposed Mitigation Ratio	Total Credits to be Debited (Proposed)
USACE Jurisdiction [1]	7.43 Acres Permanent	1:1	7.43
	0.57 Acres Temporary	No Replacement	
WCA Jurisdiction [2]	9.03 Acres Permanent	1:1	9.03
	0.74 Acres Temporary	No Replacement	

[1] Wetlands that are isolated have no connectivity to waters of the U.S. Wetlands that flow to the Rouchleau Pit, a non-regulated waters per the Approved JD (June 16, 2015), are not anticipated to be regulated under the Clean Water Act. Wetlands that flow to the active Thunderbird Mine are not anticipated to be regulated under the Clean Water Act.
[2] Wetlands created in non-wetland areas solely by actions, the purpose of which was not to create wetland, are anticipated to be determined "incidental" under the Minnesota WCA, and therefore outside the scope of the WCA (MR 8420.0105, Subp. 2.D.).

4.1.1 Agency Requirements

Approvals/permits for impacting wetlands and aquatic resources in the project area are required by Minnesota WCA and federal Section 404 of the Clean Water Act. Agency-specific approval/permit requests and proposed compensatory replacement are outlined below.

4.1.1.1 U.S. Army Corps of Engineers

The project proposes 7.43 acres of permanent wetland impact and 0.57 acres of temporary wetland impact to 33 wetland basins within the project area. The proposed project is eligible for an Individual Permit for projects with impacts greater than five (5) acres.

This permit application is a request for an **Individual Permit**. A copy of the Joint Application Form for Activities Affecting Water Resources in Minnesota is included at the front of this report.

Mitigation for permanent wetland impacts is proposed in the form of a debit of credits from an established wetland bank (see **Section 4.1** above).

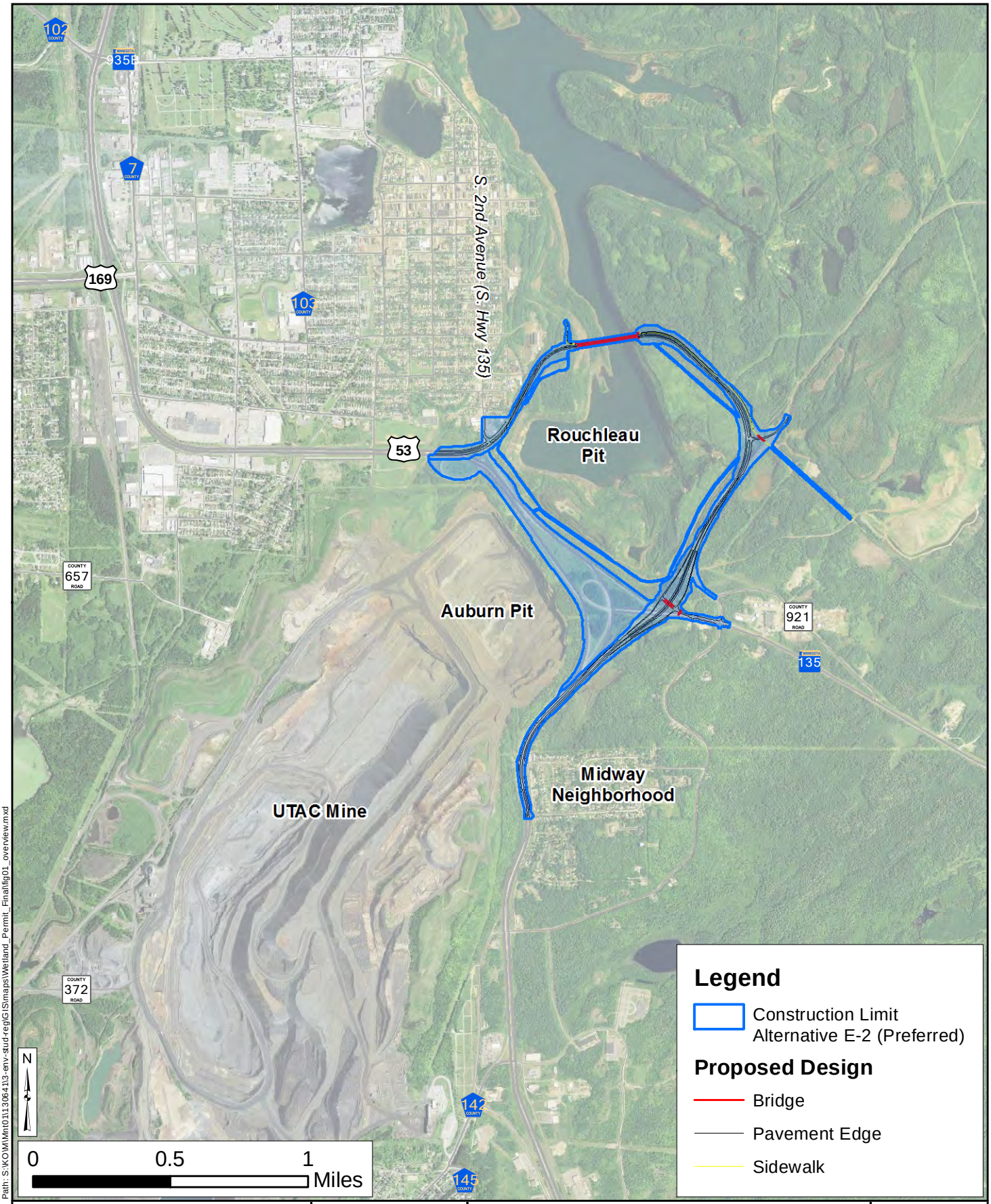
4.1.1.2 Wetland Conservation Act

The project proposes 9.03 acres of permanent wetland impact and 0.74 acres of temporary wetland impact to 33 basins within the project area. MnDOT accepts responsibility for administration of the Minnesota WCA areas of MnDOT ROW (see **Section 3.1** above). MnDOT will work with the MNDNR on WCA administration duties for those portions of the project on school trust land or otherwise "state land" that will eventually become MnDOT ROW.

This permit application will be used to request a **Replacement Plan Approva**l under the rules of the Minnesota Wetland Conservation Act of 1991. This application will also be used to request a **Wetland Boundary and Type Concurrence** for wetlands delineated in the project area. A copy of the Joint Application Form for Activities Affecting Water Resources in Minnesota is included at the beginning of this document.

Mitigation for permanent wetland impacts is proposed in the form of a debit of credits from an established wetland bank (see **Section 4.1** above).

List of Figures



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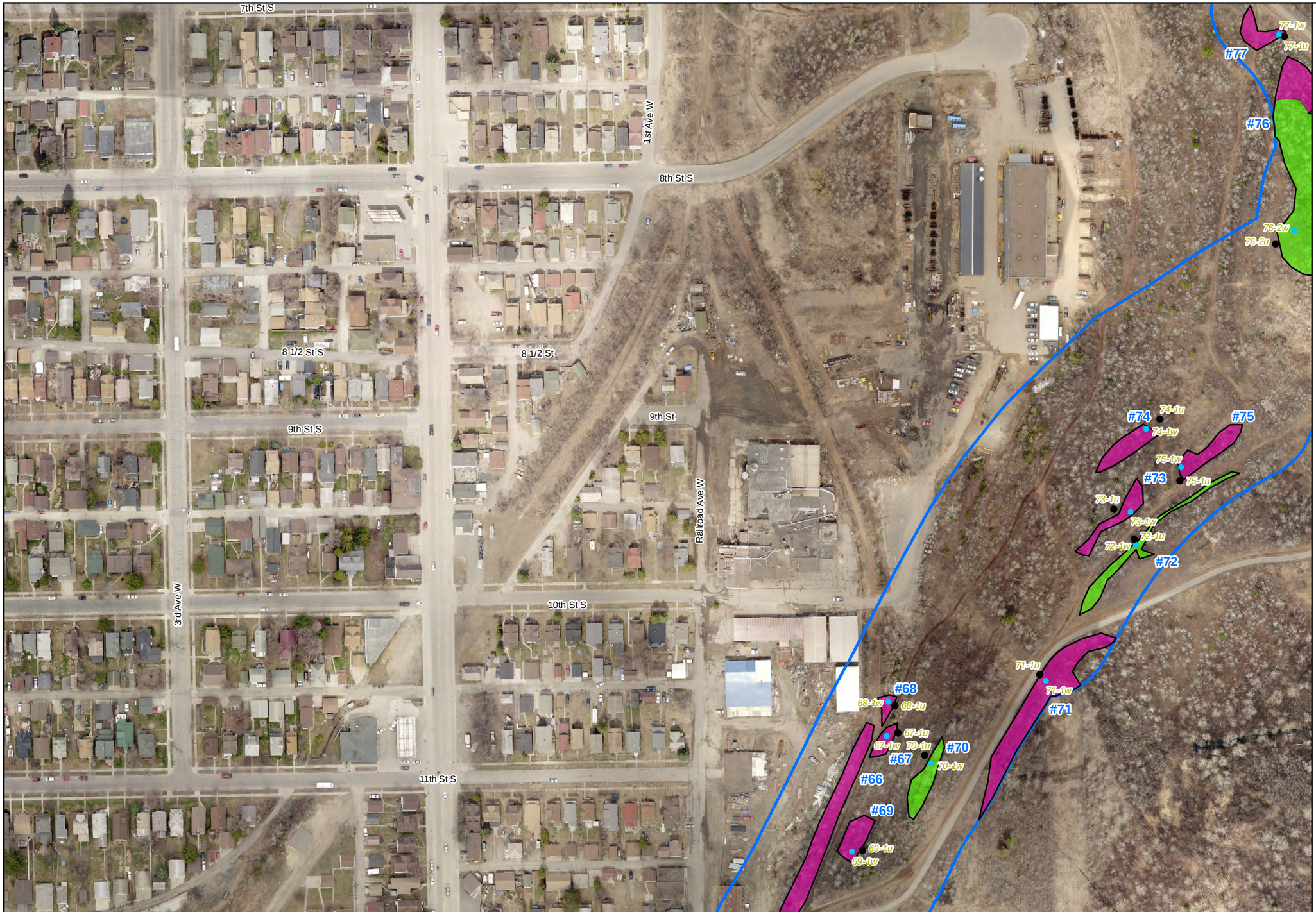
Project: MNT01 130641
Print Date: 6/22/2015

Map by: bpt
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: N/A

Project Overview Map

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 1



Legend

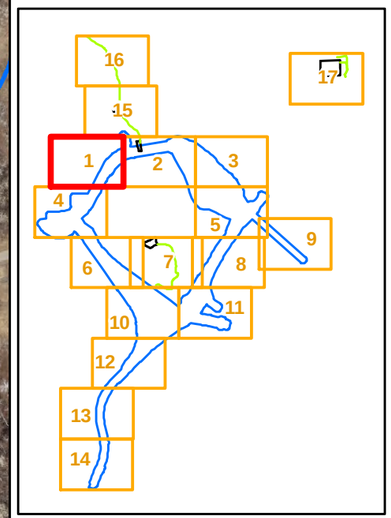
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Shrub-Carr
- Hardwood Swamp

Sample Point Location

- Wetland
- Upland



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Project: MNT01 130641
Print Date: 6/23/2015

Map by: B. Tolcser
Projection: NAD83 UTM 15N
Source: MnDOT, SEHInc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-1

#77
77-1w
77-1u
76-1w
76-1u
#76
76-2w
76-2u
#01
2-1u
2-1w
#02
#03
1-1u
1-1w
8-2u
8-2w
8-1u
8-1w
#08

Legend

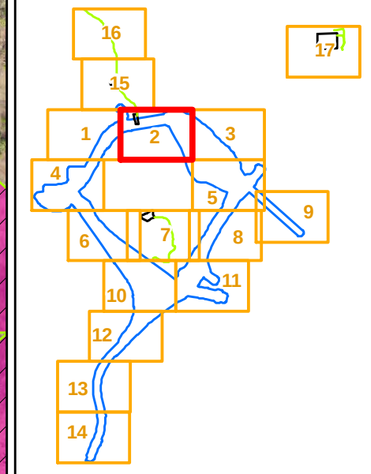
- Study Area (Area Delineated)
- Proposed Laydown Access
- Proposed Laydown Areas
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Shrub-Carr
- Hardwood Swamp
- Upland/Wetland Mosaic

Sample Point Location

- Wetland
- Upland



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Map by: B. Tolcser
Projection: NAD83 UTM 15N
Source: MnDOT, SEHInc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-2

Legend

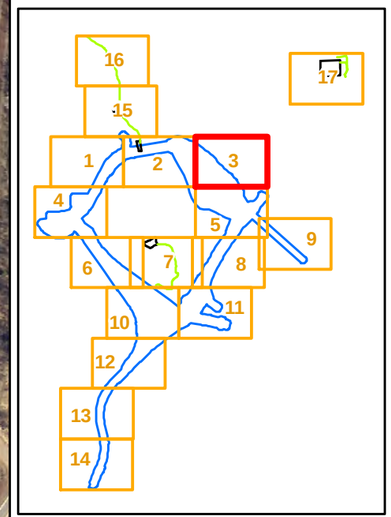
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shrub-Carr
- Hardwood Swamp
- Upland/Wetland Mosaic

Sample Point Location

- Wetland
- Upland



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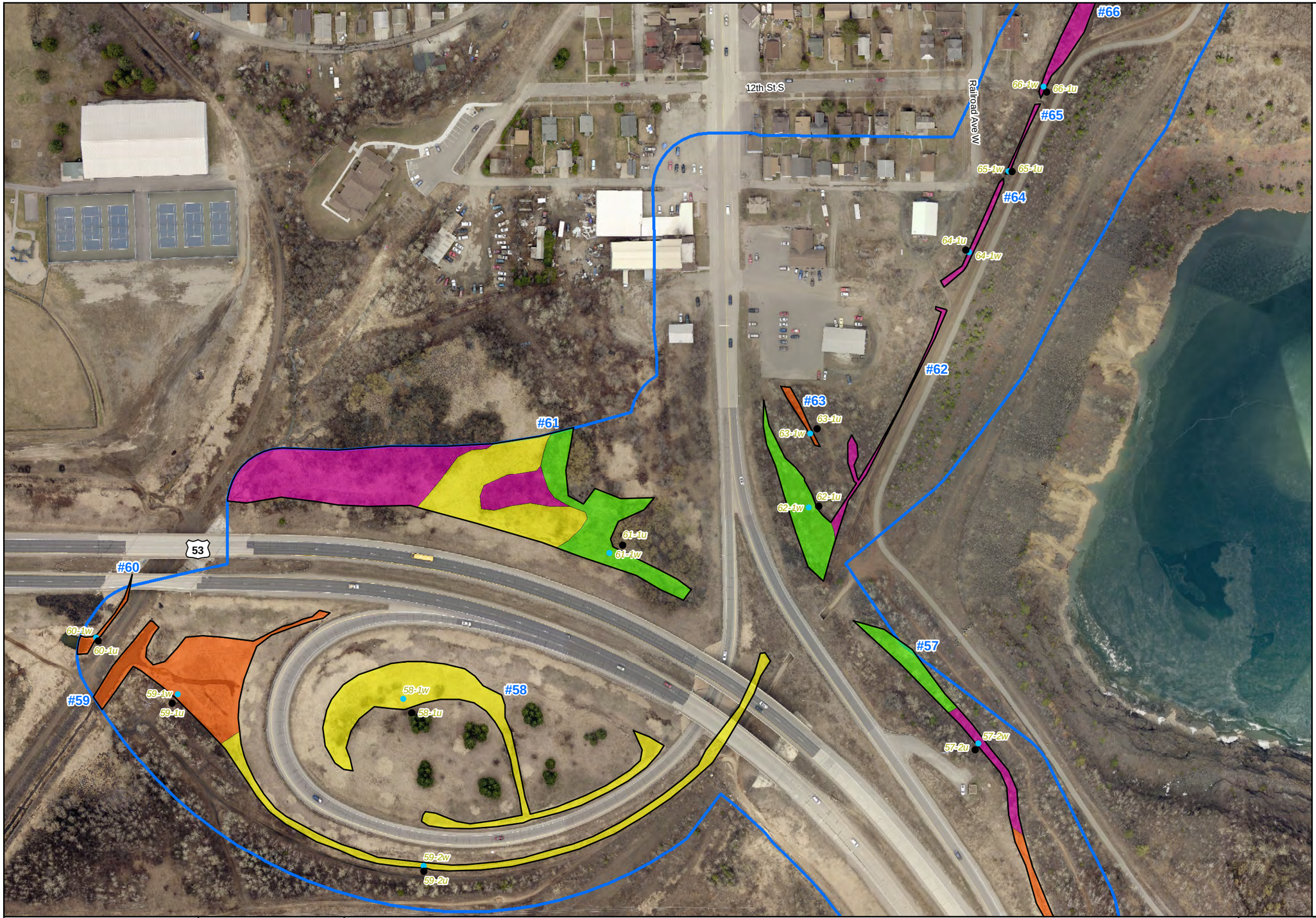
Map by: B. Tolcser
Projection: NAD83 UTM 15N
Source: MnDOT, SEHinc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-3



Legend

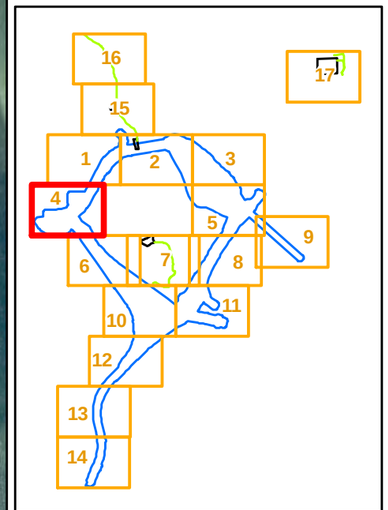
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shrub-Carr
- Hardwood Swamp

Sample Point Location

- Wetland
- Upland



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Print Date: 6/23/2015

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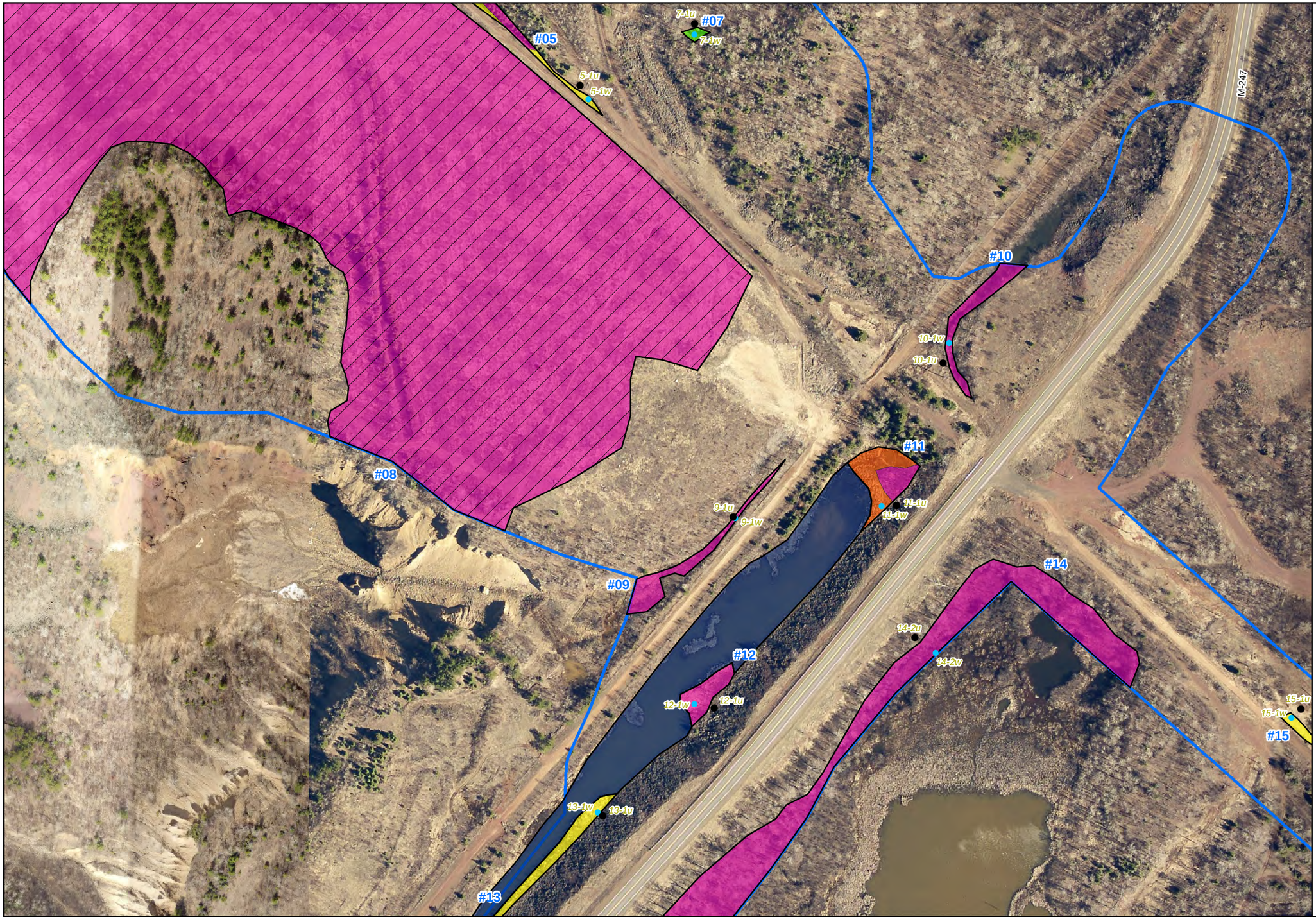
Projection: NAD83 UTM 15N
Source: MnDOT, SEHInc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-4



Legend

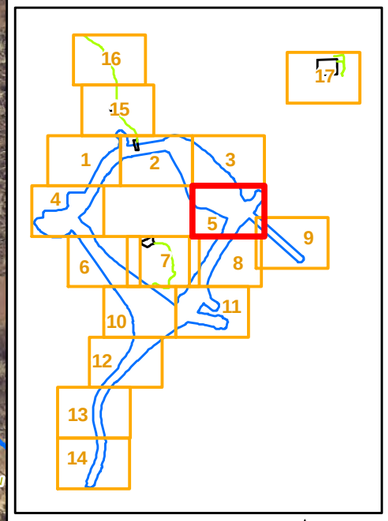
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shrub-Carr
- Hardwood Swamp
- Deepwater Habitat (Non-Wetland)
- Upland/Wetland Mosaic

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-5

Legend

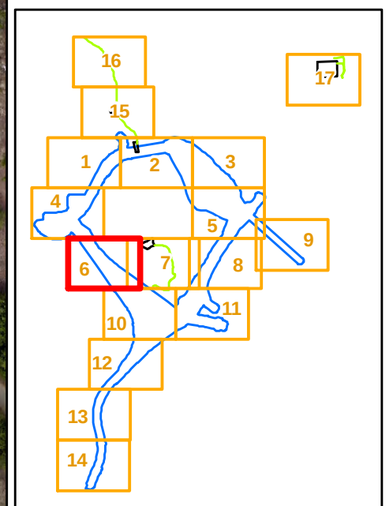
- Study Area (Area Delineated)
- Proposed Laydown Areas
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shrub-Carr

Sample Point Location

- Wetland
- Upland



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Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-6

Legend

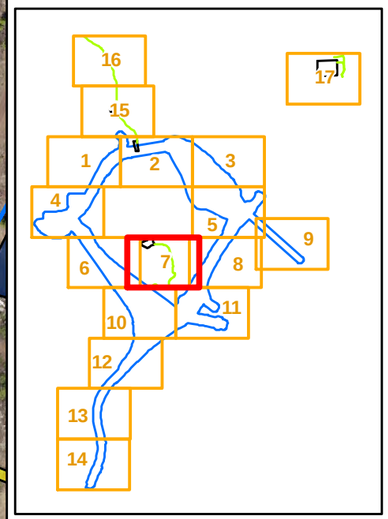
- Study Area (Area Delineated)
- Proposed Laydown Access
- Proposed Laydown Areas
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shallow Open Water
- Shrub-Carr
- Deepwater Habitat (Non-Wetland)

Sample Point Location

- Wetland
- Upland



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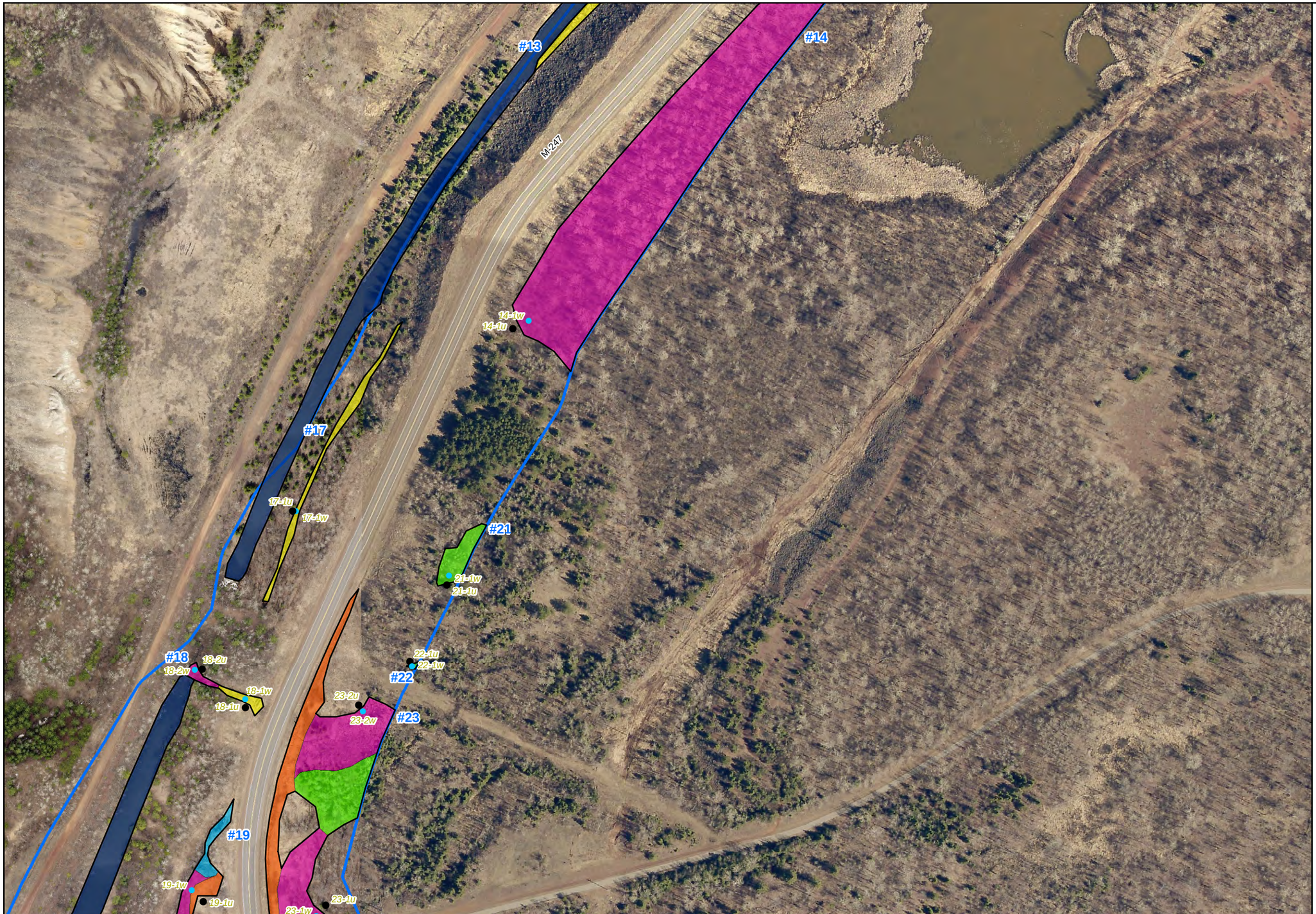
TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-7



Legend

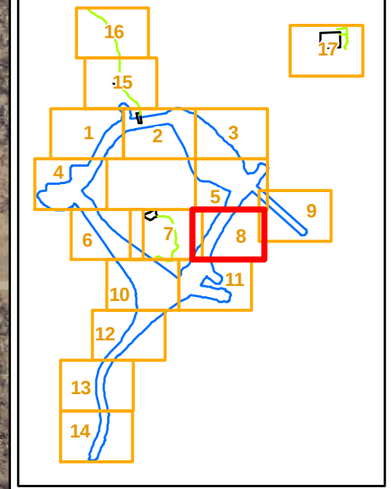
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shallow Open Water
- Shrub-Carr
- Hardwood Swamp
- Deepwater Habitat (Non-Wetland)

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-8

Legend

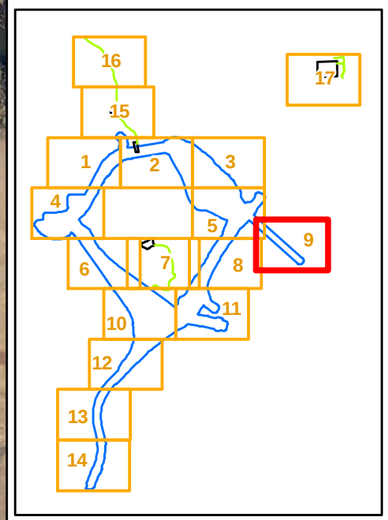
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shrub-Carr

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-9

Legend

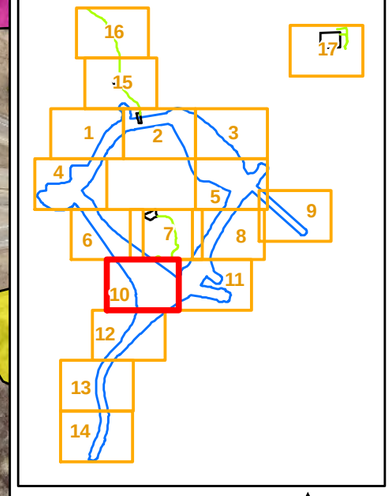
- Study Area (Area Delineated)
- Proposed Laydown Access
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Sedge Meadow
- Shallow Marsh
- Shallow Open Water
- Shrub-Carr
- Coniferous Swamp

Sample Point Location

- Wetland
- Upland



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St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-10

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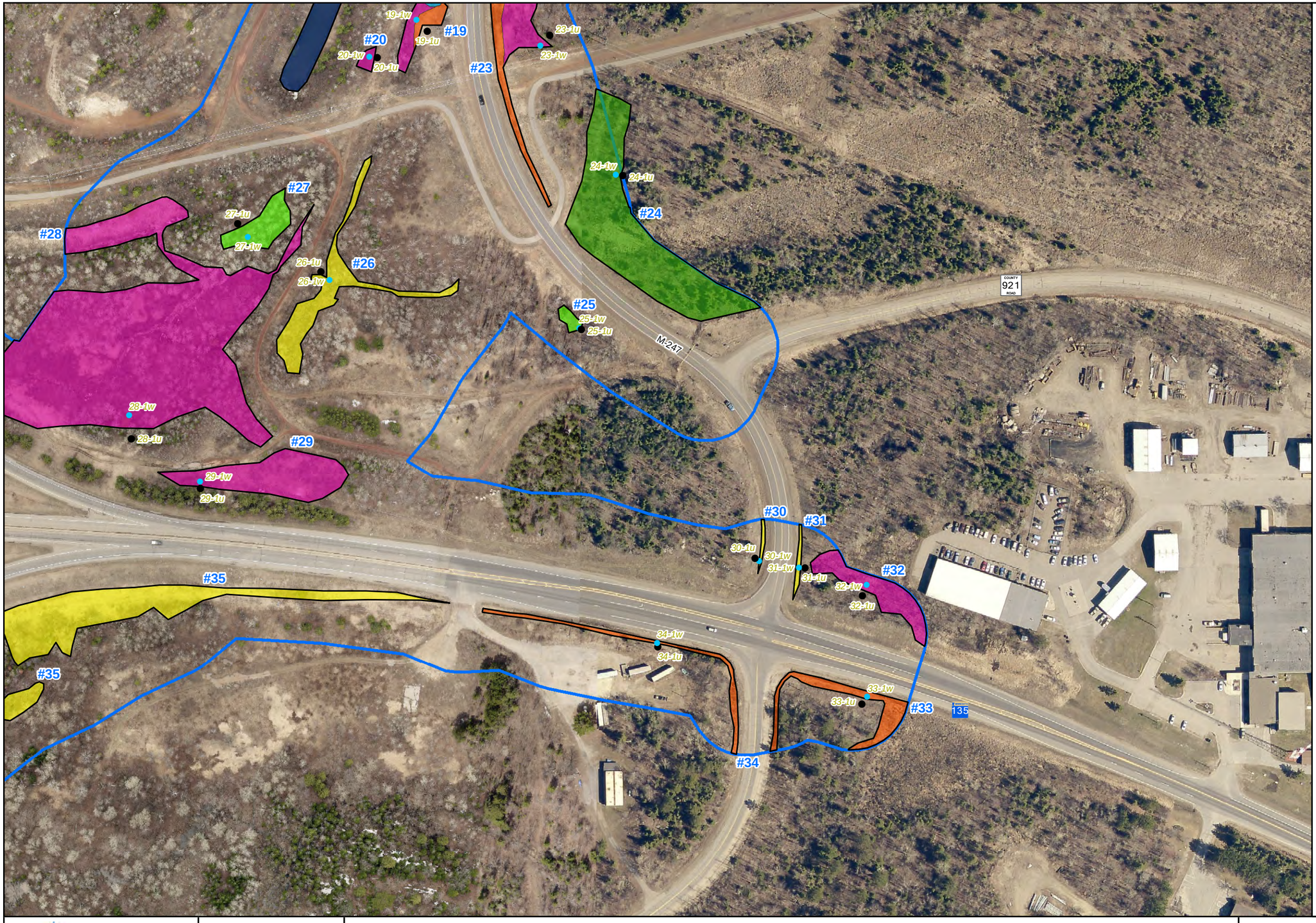


Legend

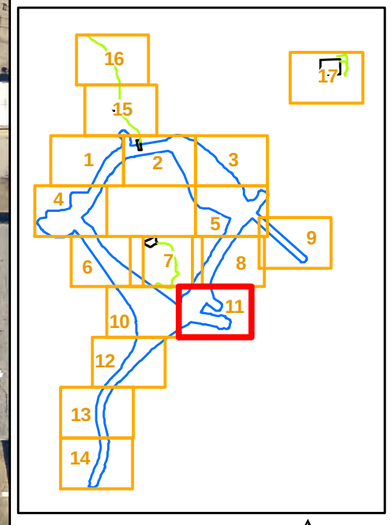
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh
- Shallow Open Water
- Shrub-Carr
- Hardwood Swamp
- Hardwood Swamp / Conifer Swamp
- Deepwater Habitat (Non-Wetland)

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-11

Legend

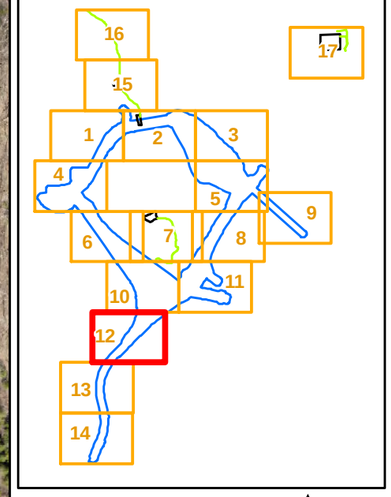
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-12

Legend

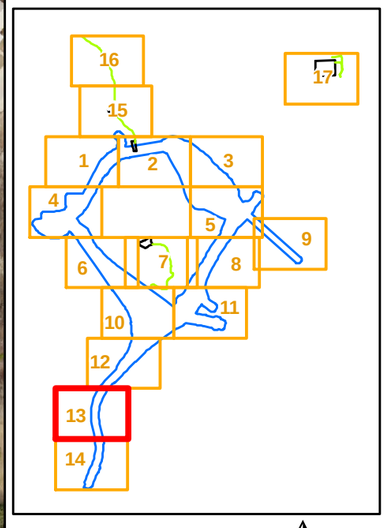
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow

Sample Point Location

- Wetland
- Upland



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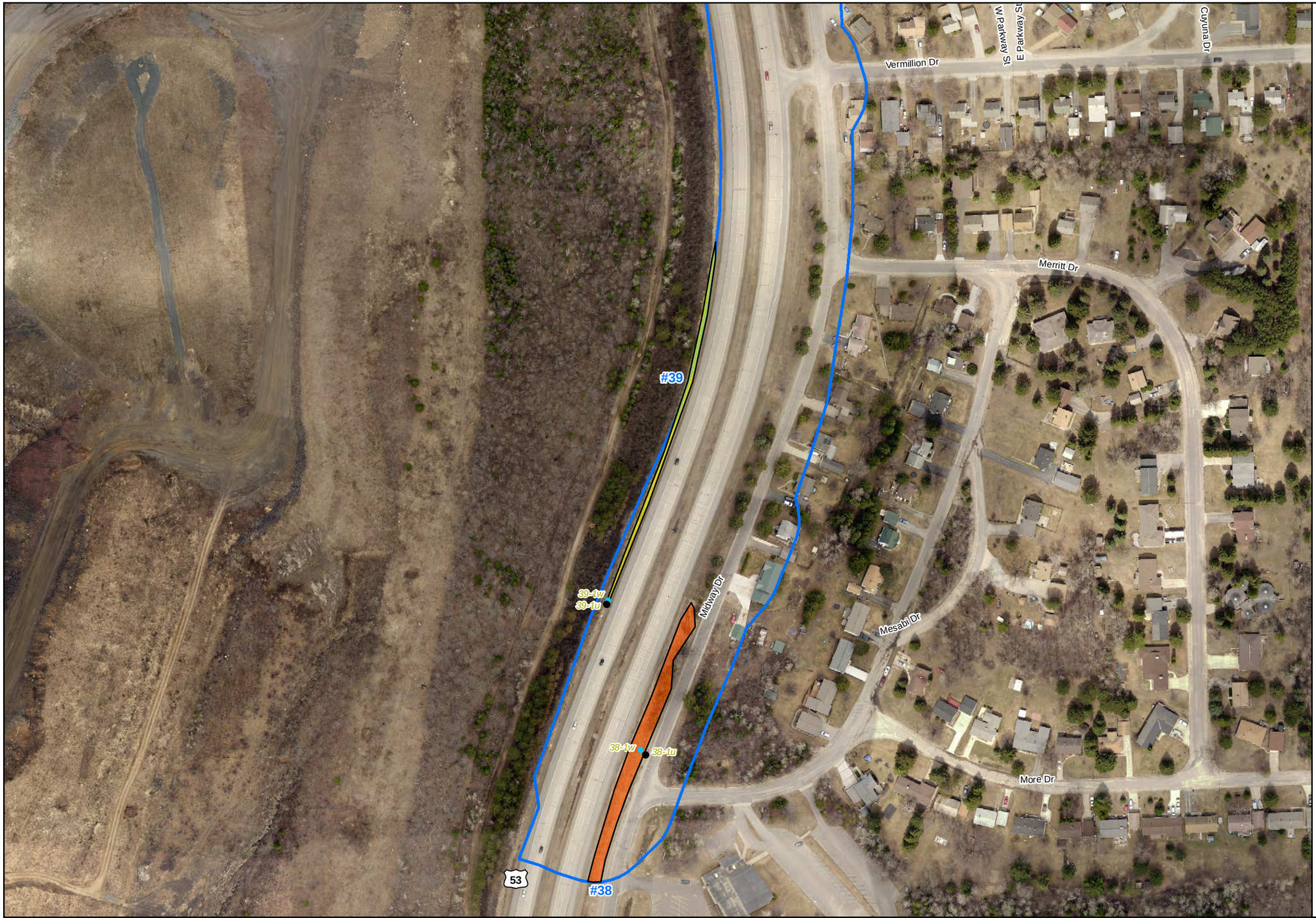
Wetland Delineation Results Maps

Figure 2-13



Legend

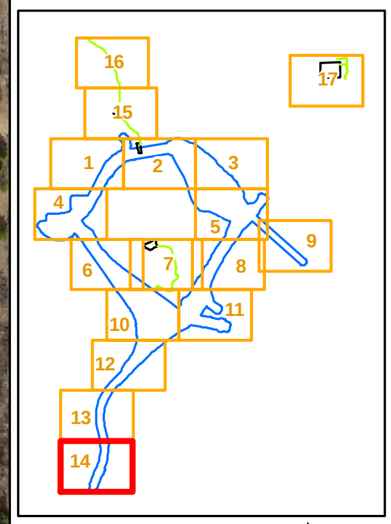
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Fresh (Wet) Meadow
- Shallow Marsh

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-14

Legend

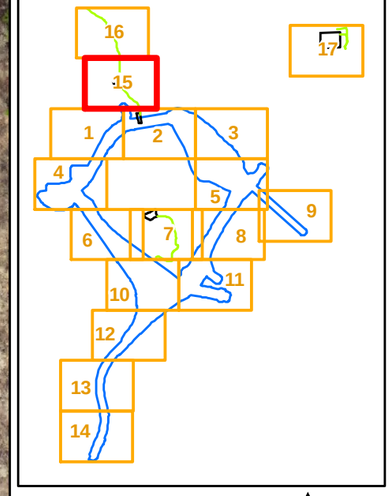
- Study Area (Area Delineated)
- Proposed Laydown Access
- Proposed Laydown Areas
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Shrub-Carr

Sample Point Location

- Wetland
- Upland



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TH 53 RELOCATION PROJECT

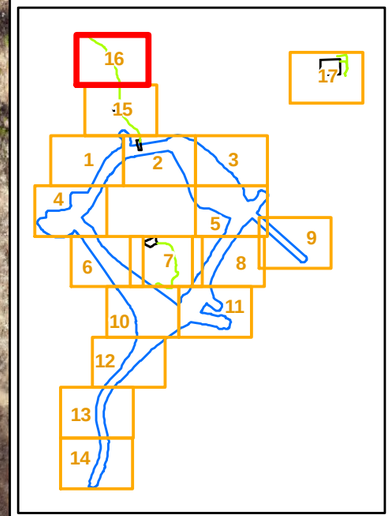
St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-15

Legend

Proposed Laydown Access



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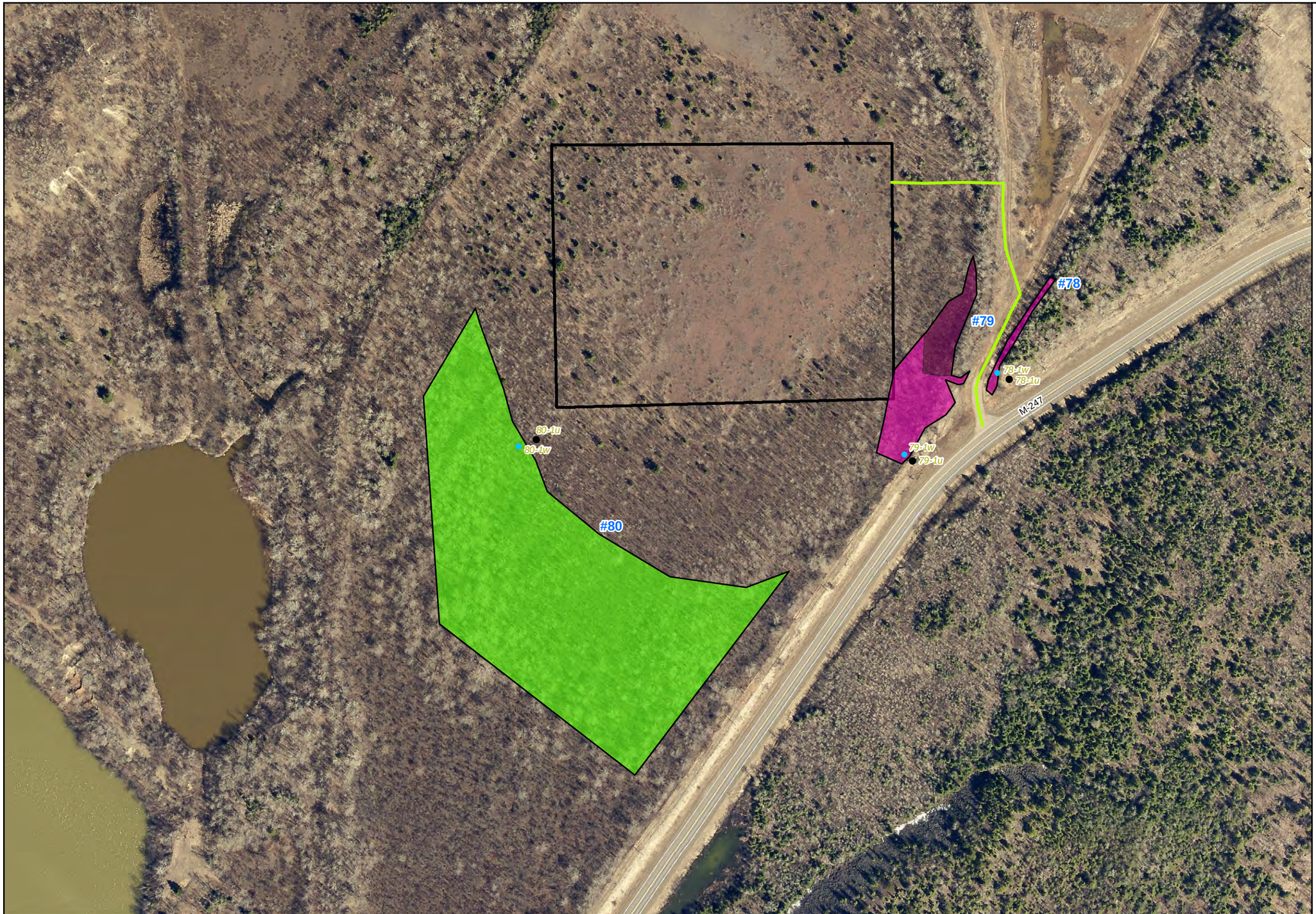
St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-16



Legend

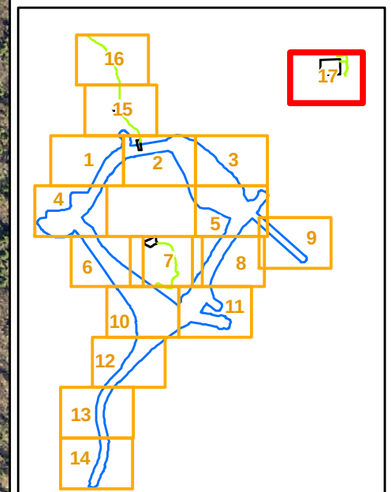
- Proposed Laydown Access
- Proposed Laydown Areas
- Delineated Wetlands (April/May 2015)

Eggers & Reed Classification

- Shrub-Carr
- Alder Thicket
- Hardwood Swamp

Sample Point Location

- Wetland
- Upland



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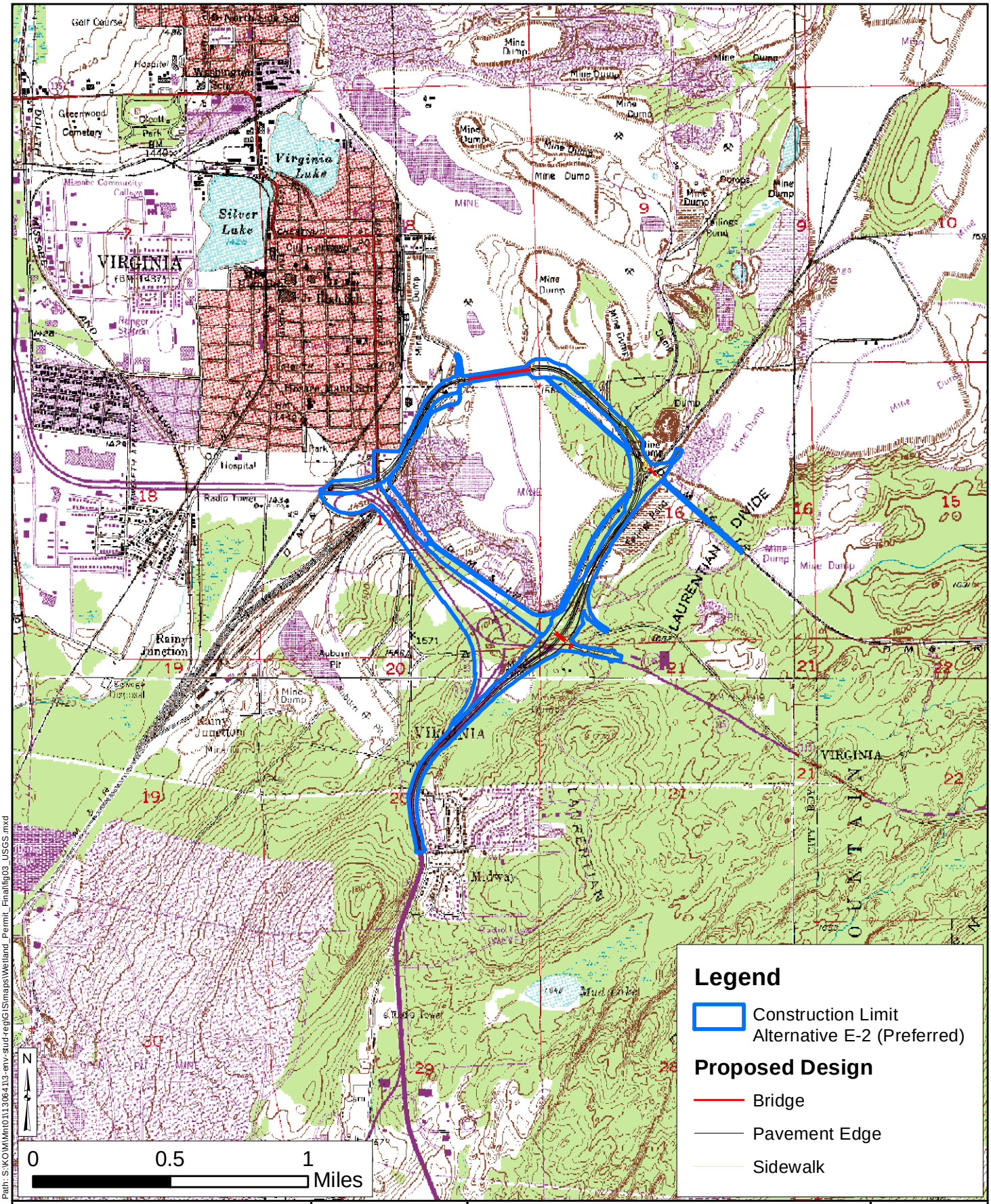
TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Delineation Results Maps

Figure 2-17



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www.sehinc.com

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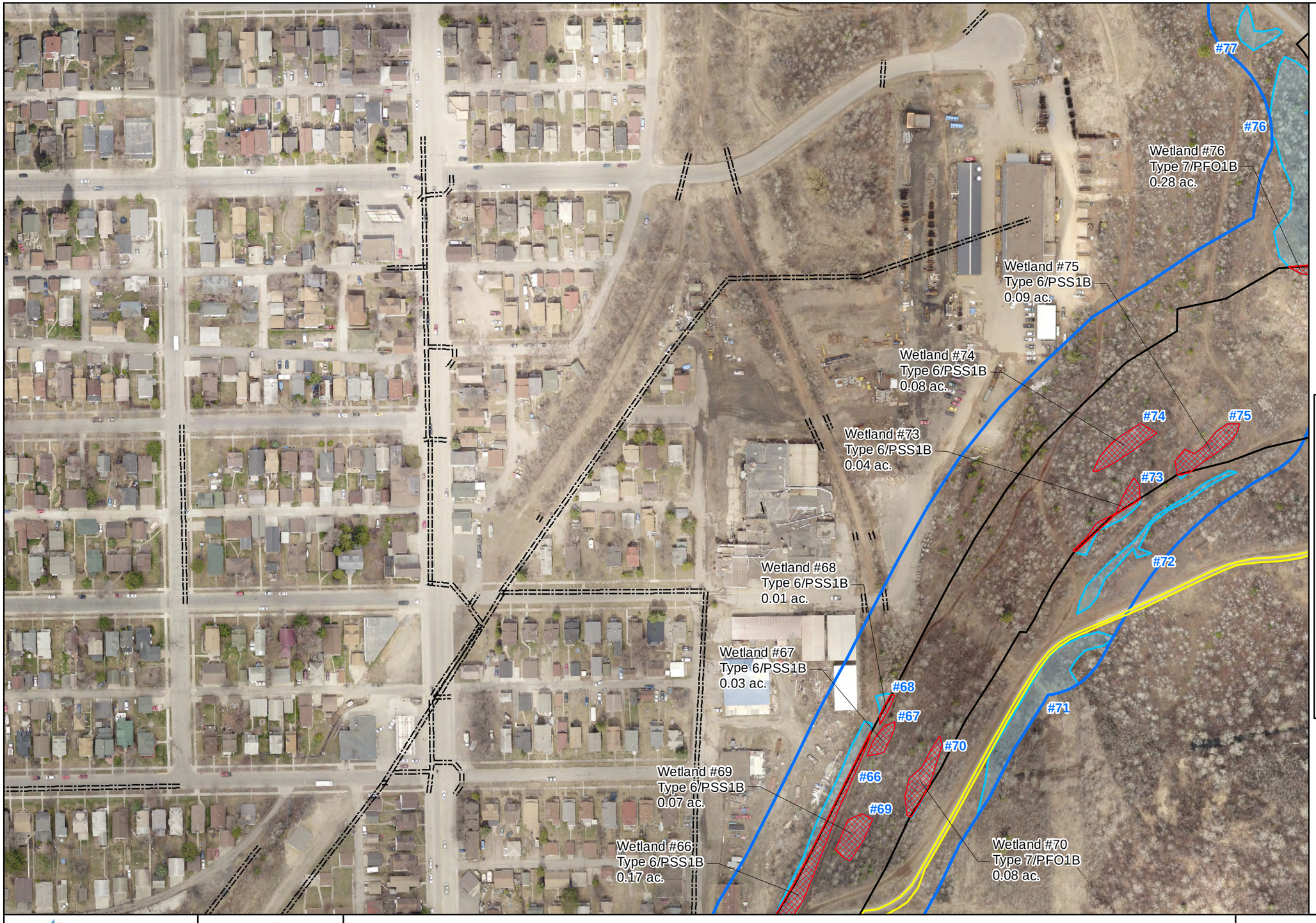
Print Date: 6/22/2015

Map by: bpt
Projection: MN St. Louis Co. Central
Source: MnDNR, SEHInc
Background: USGS 24k Topo

Project Location Map (USGS)

TH 53 Relocation Project
St. Louis County, Minnesota

Figure 3



Legend

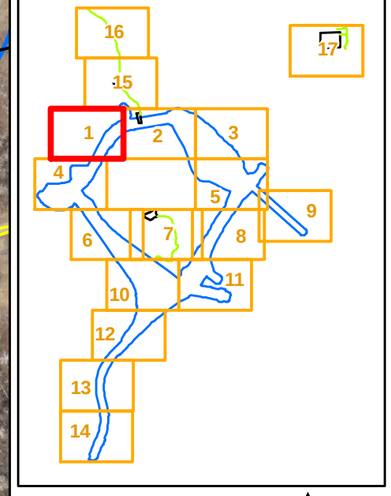
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact



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Project: MNT01 130641
Print Date: 6/25/2015

Map by: B. Tolcser
Projection: NAD83 UTM 15N
Source: MnDOT, SEHInc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-1

Legend

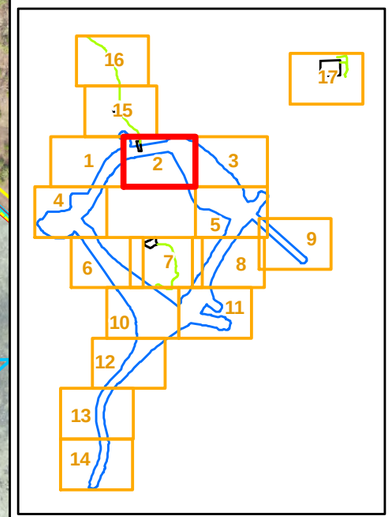
- Study Area (Area Delineated)
- Proposed Laydown Access
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts
- Proposed Laydown Areas

Proposed Wetland Impacts

- Permanent Impact
- Temporary Impact (Widening of Access Road)



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Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-2

#02
#03
Wetland #03
Type 6/PSS1B
0.26 ac.
#04
Wetland #04
Type 6/PSS1B
0.04 ac.
Wetland #04
Type 3/PEMC
0.08 ac.
#08
#06
Wetland #06
Type 7/PFO1B
0.12 ac.
Wetland #08
Type 6/PSS1B
0.19 ac.
#05
Wetland #05
Type 2/PEMB
2ft
Wetland #07
Type 7/PFO1B
0.02 ac.
Wetland #08
Type 6/PSS1B
0.03 ac.
#07

Legend

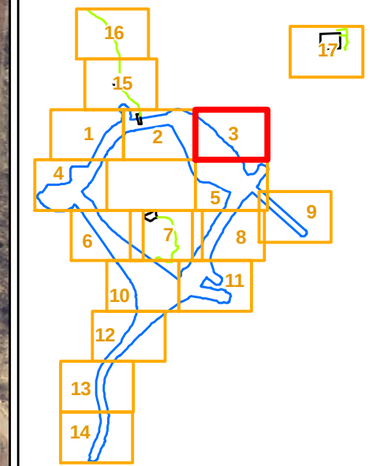
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Temporary Impact (Widening of Access Road)



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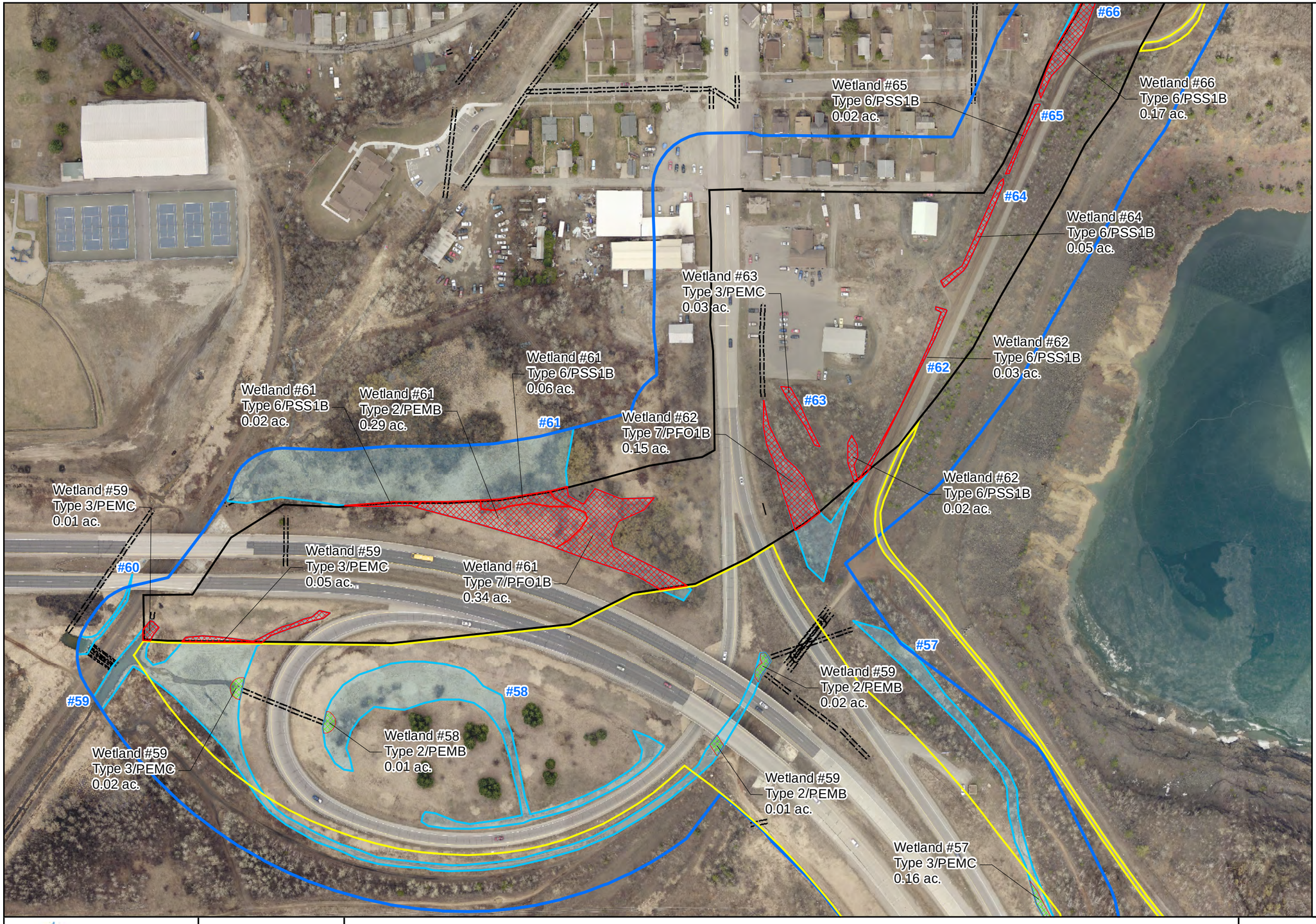
Map by: B. Tolcser
Projection: NAD83 UTM 15N
Source: MnDOT, SEHinc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-3



Legend

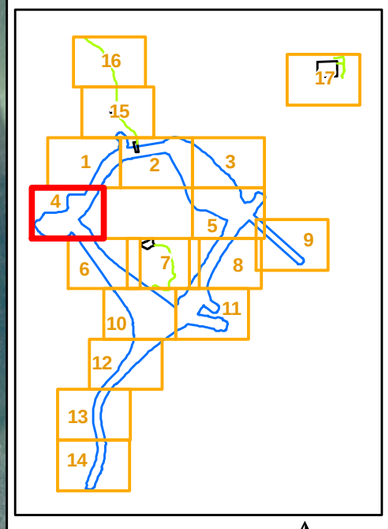
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Temporary Impact (Culvert/Utility Removal)



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Projection: NAD83 UTM 15N
Source: MnDOT, SEHInc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-4

#05
#07
#08
#09
#10
#11
#12
#13
#14
#15

Wetland #08
Type 6/PSS1B
0.03 ac.

Wetland #07
Type 7/PFO1B
0.02 ac.

Wetland #05
Type 2/PEMB
74sf

Wetland #08
Type 6/PSS1B
0.65 ac.

Wetland #11
Type 3/PEMC
0.14 ac.

Wetland #10
Type 6/PSS1B
0.04 ac.

Wetland #11
Type 6/PSS1C
0.07 ac.

Wetland #09
Type 6/PSS1B
0.06 ac.

Pit Pond #1
(Non-Wetland)
1.38 ac.

Wetland #12
Type 6/PSS1B
0.10 ac.

Wetland #15
Type 2/PEMB
251sf

Legend

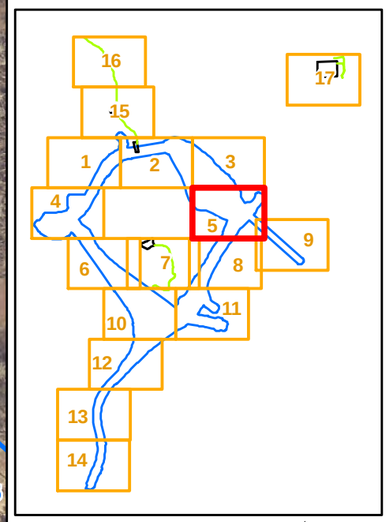
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Permanent Impact (Non-Wetland Aquatic Resource)
- Temporary Impact (Widening of Access Road)



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Projection: NAD83 UTM 15N
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Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-5

Legend

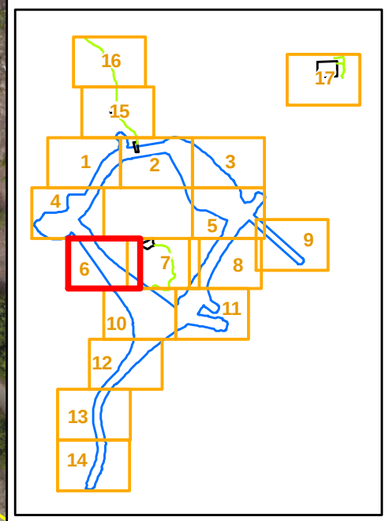
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Removal Area Only - No Impacts
- Proposed Laydown Areas

Proposed Wetland Impacts

- Temporary Impact (Culvert/Utility Removal)



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Projection: NAD83 UTM 15N
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Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-6

Legend

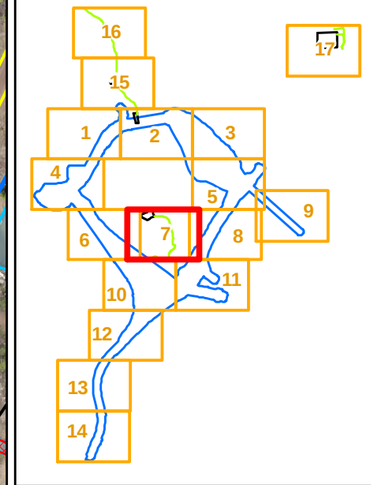
- Study Area (Area Delineated)
- Proposed Laydown Access
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts
- Proposed Laydown Areas

Proposed Wetland Impacts

- Permanent Impact
- Permanent Impact (Non-Wetland Aquatic Resource)
- Temporary Impact (Culvert/Utility Removal)



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-7

#13
#14
#17
#21
#18
#22
#23
#19

Wetland #14
Type 6/PSS1B
0.44 ac.

Wetland #17
Type 2/PEMB
309sf

Wetland #18
Type 2/PEMB
0.03 ac.

Pit Pond 2
(Non-Wetland)
0.31 ac.

Wetland #23
Type 6/PSS1B
0.08 ac.

Wetland #23
Type 3/PEMC
0.35 ac.

Wetland #23
Type 7/PFO1B
0.02 ac.

Wetland #19
Type 5/PUBF
0.05 ac.

Legend

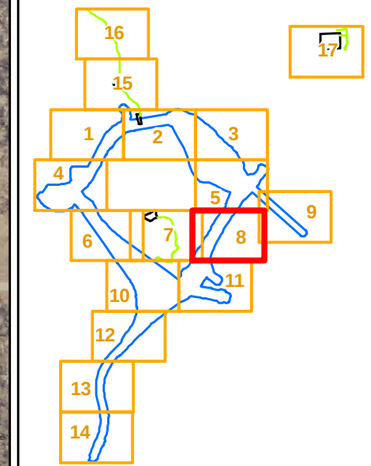
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Permanent Impact (Non-Wetland Aquatic Resource)



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0 150 300 Feet

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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-8

Legend

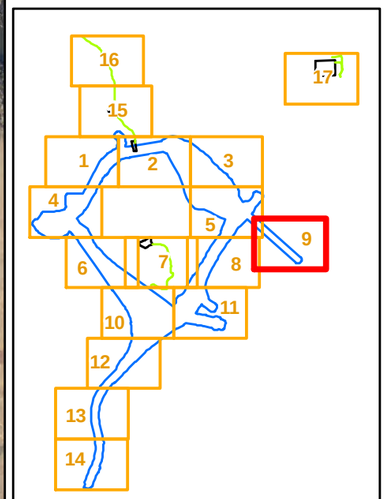
- Study Area (Area Delineated)
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit

Proposed Wetland Impacts

- Permanent Impact



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Projection: NAD83 UTM 15N
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Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-9

Legend

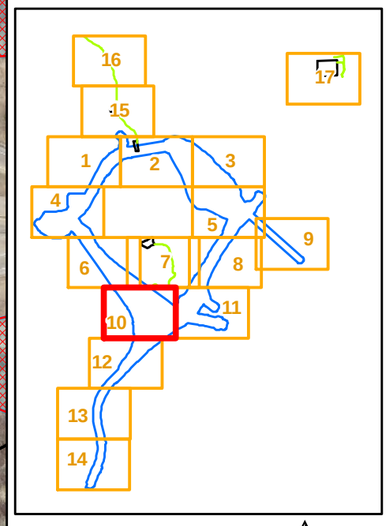
- Study Area (Area Delineated)
- Proposed Laydown Access
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Temporary Impact (Culvert/Utility Removal)



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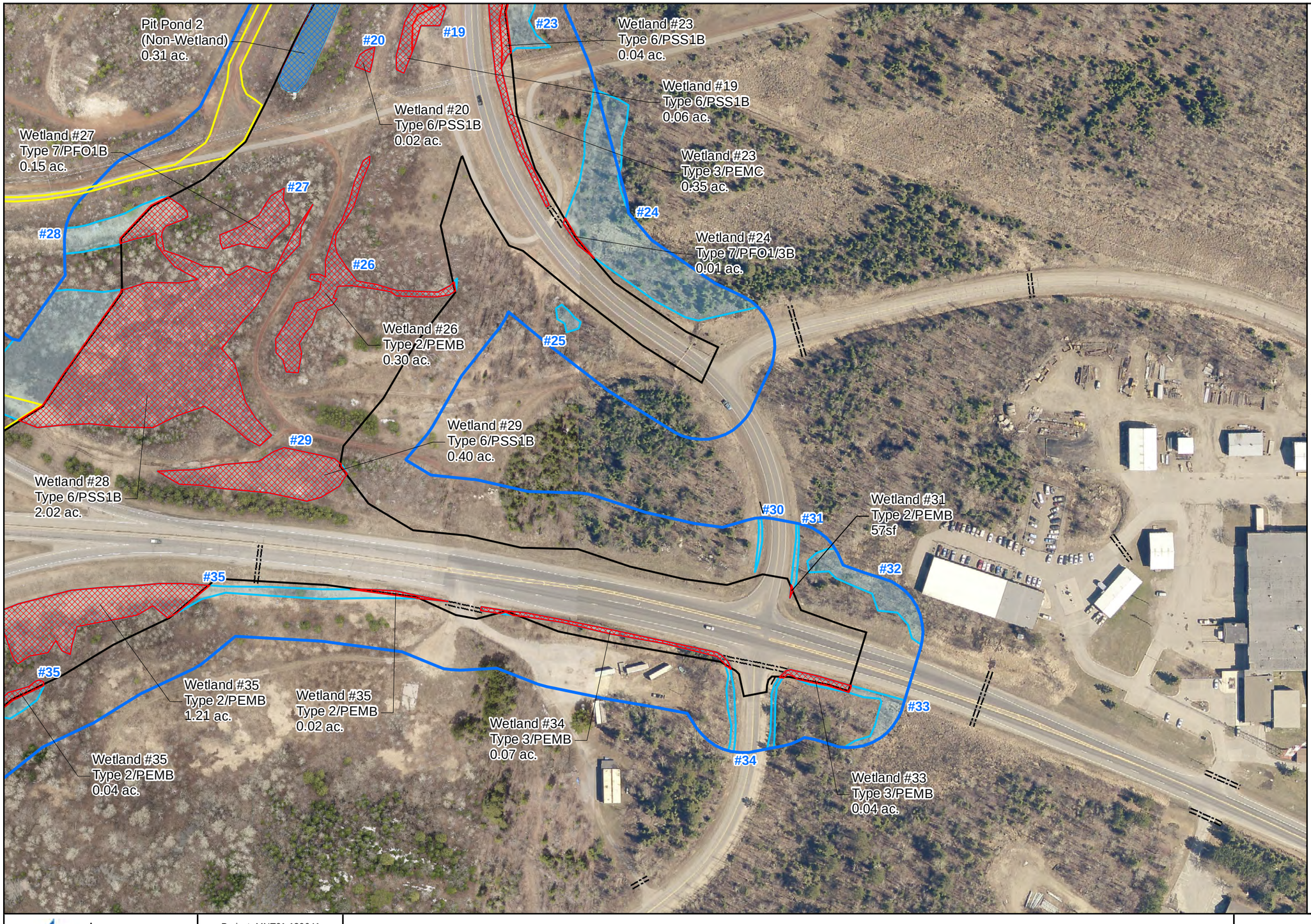
TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-10



Legend

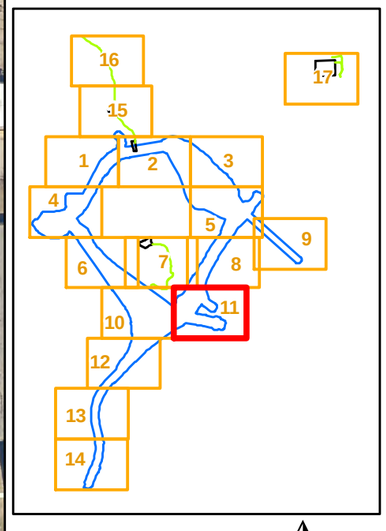
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Permanent Impact (Non-Wetland Aquatic Resource)



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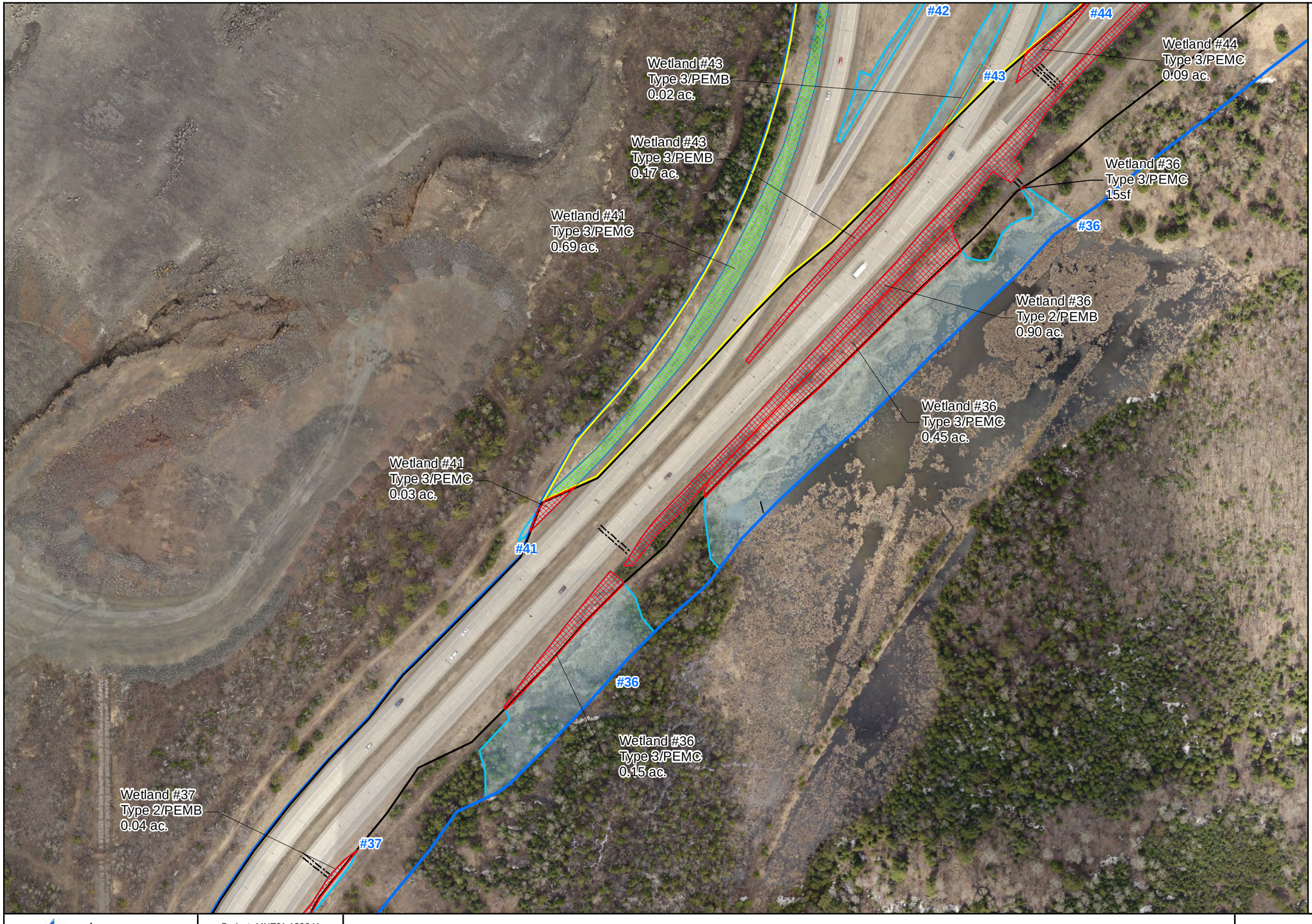
TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-11



Legend

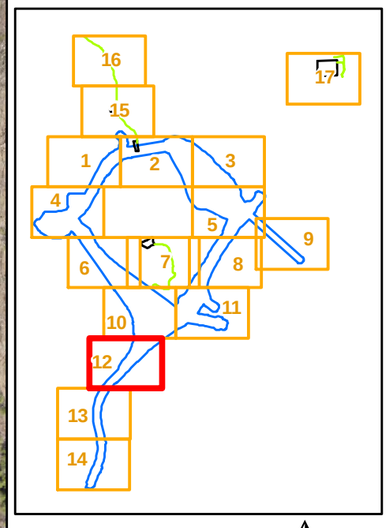
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Removal Area Only - No Impacts

Proposed Wetland Impacts

- Permanent Impact
- Temporary Impact (Culvert/Utility Removal)



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-12

Legend

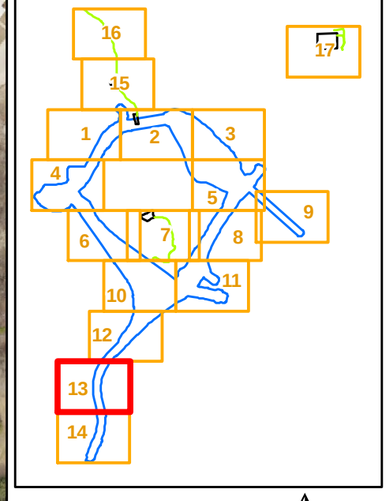
- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit

Proposed Wetland Impacts

- Permanent Impact



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Projection: NAD83 UTM 15N
Source: MnDOT, SEHInc, KHA, MNDNR
Background: 2013 St. Louis Co.

TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

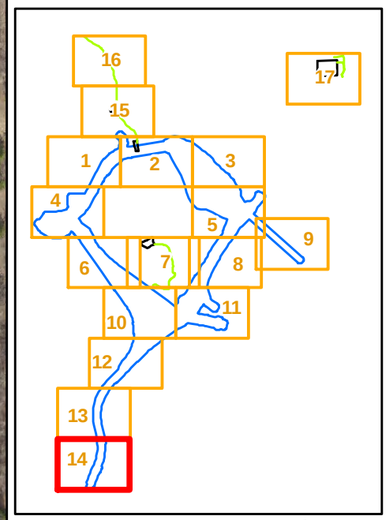
Figure 4-13

Legend

- Study Area (Area Delineated)
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit



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Source: MnDOT, SEHInc, KHA, MNDNR
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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

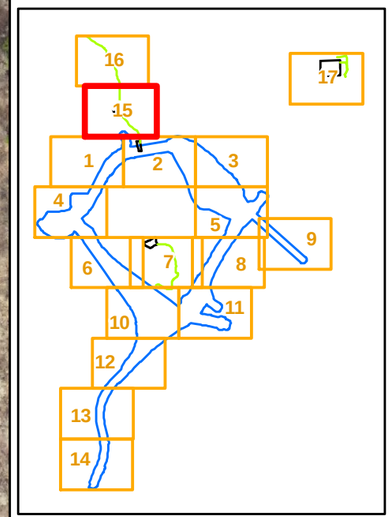
Figure 4-14

Legend

- Study Area (Area Delineated)
- Proposed Laydown Access
- Existing Pipes/Culverts
- Delineated Wetlands (April/May 2015)

Construction Limits

- Project Construction Limit
- Proposed Laydown Areas



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Projection: NAD83 UTM 15N
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TH 53 RELOCATION PROJECT

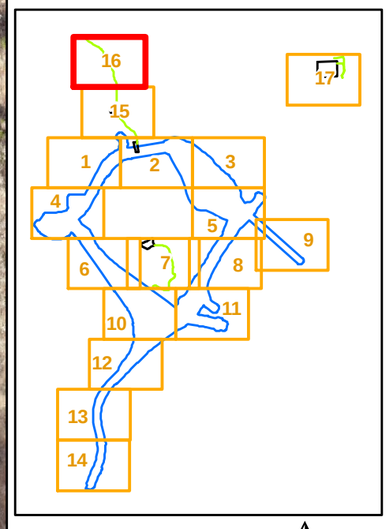
St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-15

Legend

Proposed Laydown Access



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TH 53 RELOCATION PROJECT

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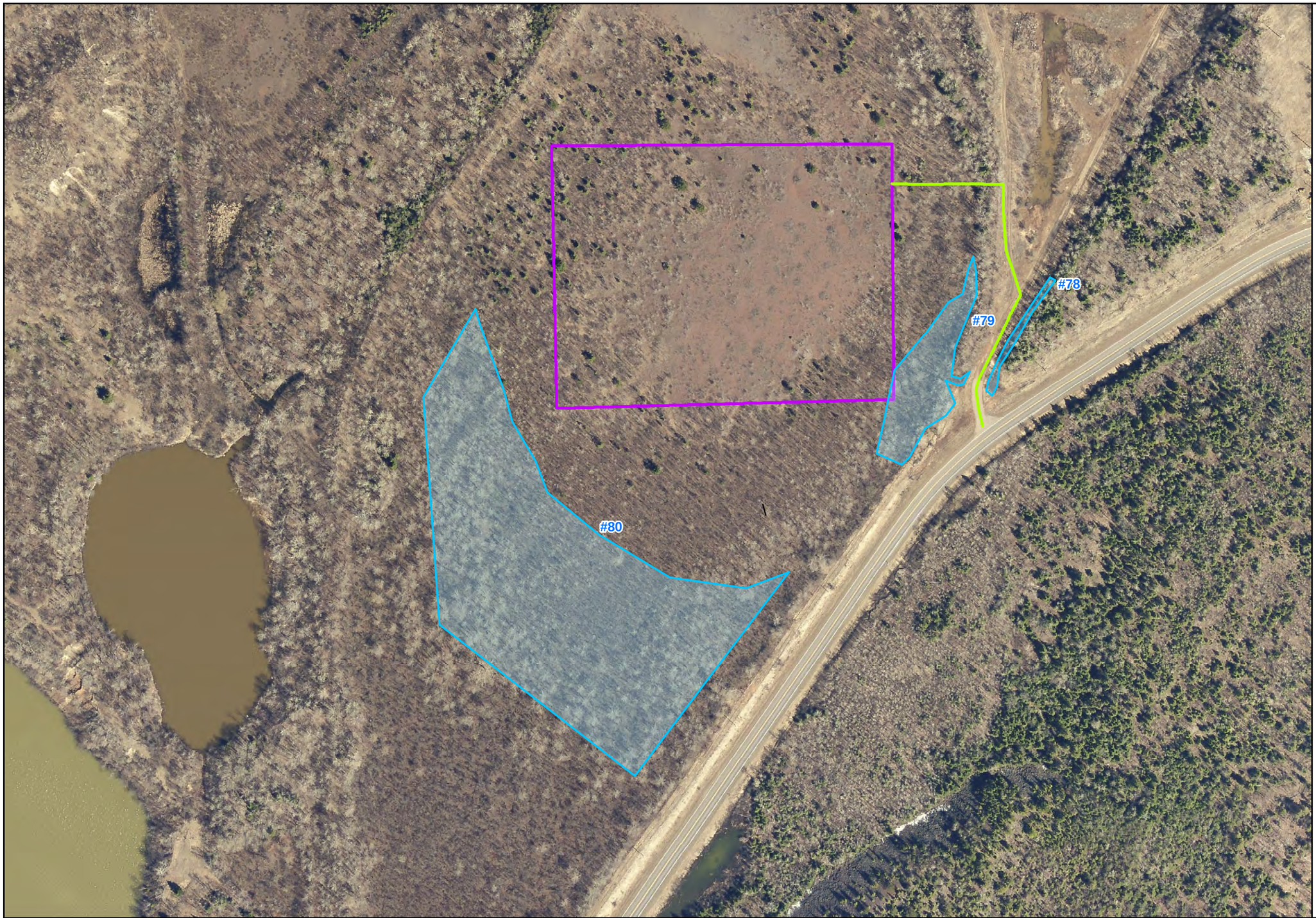
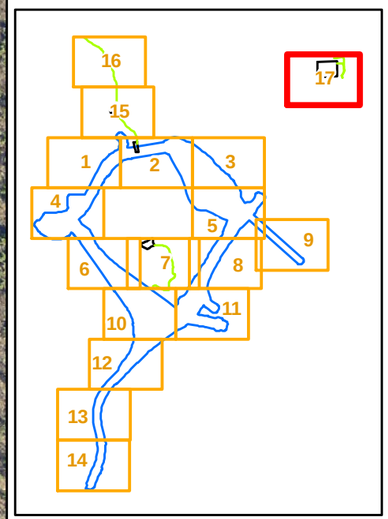
Wetland Impacts Maps

Figure 4-16



Legend

- Proposed Laydown Access
- Delineated Wetlands (April/May 2015)
- Proposed Laydown Areas



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TH 53 RELOCATION PROJECT

St. Louis County, Minnesota

Wetland Impacts Maps

Figure 4-17

Appendix C

Table C-1. Summary of Wetland Basins by Catchment and Landscape Position

Table C-1. Summary of Wetlands by Catchment Area and Landscape Position

Wetland ID Number	Plant Community	Connectivity / Hydrologic Catchment Area	Landscape Notes
Basins within Manganika Lake Hydrologic Catchment Area			
25	Hardwood Swamp	Manganika Lake Hydrologic Catchment	
26	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	
27	Hardwood Swamp	Manganika Lake Hydrologic Catchment	
28	Shrub-Carr	Manganika Lake Hydrologic Catchment	
29	Shrub-Carr	Manganika Lake Hydrologic Catchment	
34	Shallow Marsh	Manganika Lake Hydrologic Catchment	Wet roadside ditch
35	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	
36	Shallow Marsh	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
37	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	Wet roadside ditch
42	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	Wet roadside ditch
43	Shallow Marsh	Manganika Lake Hydrologic Catchment	Wet roadside ditch
44	Shallow Marsh / Shallow Open Water	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
45	Sedge Meadow	Manganika Lake Hydrologic Catchment	
47	Shrub-Carr	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
48	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	Wet roadside ditch
49	Coniferous Swamp	Manganika Lake Hydrologic Catchment	
50	Shrub-Carr	Manganika Lake Hydrologic Catchment	
51	Shrub-Carr	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
53	Fresh (Wet) Meadow / Shrub-Carr	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
55	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	Wet roadside ditch
56	Shrub-Carr	Manganika Lake Hydrologic Catchment	Wet roadside ditch
57	Shrub-Carr / Shallow Marsh / Hardwood Swamp	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
58	Fresh (Wet) Meadow	Manganika Lake Hydrologic Catchment	Wet roadside ditch
59	Fresh (Wet) Meadow / Shallow Marsh	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
60	Shallow Marsh	Manganika Lake Hydrologic Catchment	Wet roadside ditch
61	Shrub-Carr	Manganika Lake Hydrologic Catchment	

Wetland ID Number	Plant Community	Connectivity / Hydrologic Catchment Area	Landscape Notes
62	Shrub-Carr / Hardwood Swamp	Manganika Lake Hydrologic Catchment	A portion of the wetland is wet roadside ditch
64	Shrub-Carr	Manganika Lake Hydrologic Catchment	Wet roadside ditch
65	Shrub-Carr	Manganika Lake Hydrologic Catchment	Wet roadside ditch
66	Shrub-Carr	Manganika Lake Hydrologic Catchment	Linear basin in old railyard area
67	Shrub-Carr	Manganika Lake Hydrologic Catchment	Linear basin in old railyard area
68	Shrub-Carr	Manganika Lake Hydrologic Catchment	Linear basin in old railyard area
69	Shrub-Carr	Manganika Lake Hydrologic Catchment	Linear basin in old railyard area
70	Hardwood Swamp	Manganika Lake Hydrologic Catchment	Linear basin in old railyard area
Basins within Mud Lake Hydrologic Catchment Area			
38	Shallow Marsh	Mud Lake Hydrologic Catchment	Wet roadside ditch
39	Fresh (Wet) Meadow	Mud Lake Hydrologic Catchment	Wet roadside ditch
Basins within Rouchleau Pit Hydrologic Catchment Area			
1	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	A portion of the wetland is wet roadside ditch
3	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	
4	Shrub-Carr / Shallow Marsh	Rouchleau Pit Hydrologic Catchment	Manmade ravine near old mine dump
5	Fresh (Wet) Meadow / Shrub-Carr	Rouchleau Pit Hydrologic Catchment	A portion of the wetland is wet roadside ditch
6	Hardwood Swamp	Rouchleau Pit Hydrologic Catchment	
8	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Upland/wetland mosaic
9	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Wet roadside ditch
10	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Linear basin between road and past mine dump
11	Shrub-Carr / Shallow Marsh	Rouchleau Pit Hydrologic Catchment	Wetland developed at margin of deep water pit pond
12	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Wetland developed at margin of deep water pit pond
13	Fresh (Wet) Meadow	Rouchleau Pit Hydrologic Catchment	Wetland developed at margin of deep water pit pond
14	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Wetland in old tailings basin
15	Fresh (Wet) Meadow	Rouchleau Pit Hydrologic Catchment	Wet roadside ditch
16	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Manmade ravine
17	Fresh (Wet) Meadow	Rouchleau Pit Hydrologic Catchment	Linear basin between Landfill Road and pit pond

Wetland ID Number	Plant Community	Connectivity / Hydrologic Catchment Area	Landscape Notes
18	Fresh (Wet) Meadow / Shrub-Carr	Rouchleau Pit Hydrologic Catchment	
19	Shrub-Carr / Shallow Open Water / Shallow Marsh	Rouchleau Pit Hydrologic Catchment	
20	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	
23	Shrub-Carr / Hardwood Swamp / Shallow Marsh	Rouchleau Pit Hydrologic Catchment	A portion of the wetland is wet roadside ditch
24	Hardwood Swamp / Coniferous Swamp	Rouchleau Pit Hydrologic Catchment	
30	Fresh (Wet) Meadow	Rouchleau Pit Hydrologic Catchment	Wet roadside ditch
31	Fresh (Wet) Meadow	Rouchleau Pit Hydrologic Catchment	Wet roadside ditch
32	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	
33	Shallow Marsh	Rouchleau Pit Hydrologic Catchment	Wet roadside ditch
71	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	
76	Shrub-Carr / Hardwood Swamp	Rouchleau Pit Hydrologic Catchment	
77	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	
78	Shrub-Carr	Rouchleau Pit Hydrologic Catchment	Wet roadside ditch
79	Alder Thicket / Shrub-Carr	Rouchleau Pit Hydrologic Catchment	A portion of the wetland is wet roadside ditch. Located in old tailings basin
80	Hardwood Swamp	Rouchleau Pit Hydrologic Catchment	Located in old tailings basin
Pit Pond 1	Non-wetland deepwater	Rouchleau Pit Hydrologic Catchment	Wetlands 11, 12, and 13 located at pond margin
Pit Pond 2	Non-wetland deepwater	Rouchleau Pit Hydrologic Catchment	Wetland 18 located at pond margin
Basins within Thunderbird Mine Pit Hydrologic Catchment			
40	Fresh (Wet) Meadow	Thunderbird Mine Pit Hydrologic Catchment	Wet roadside ditch
41	Shallow Marsh	Thunderbird Mine Pit Hydrologic Catchment	Wet roadside ditch
54	Fresh (Wet) Meadow	Thunderbird Mine Pit Hydrologic Catchment	Wet roadside ditch
Basins with Isolated Landscape Position			
2	Shrub-Carr	Isolated	
7	Hardwood Swamp	Isolated	
21	Hardwood Swamp	Isolated	Wetland in area of old mine dump
22	Hardwood Swamp	Isolated	

Wetland ID Number	Plant Community	Connectivity / Hydrologic Catchment Area	Landscape Notes
46	Sedge Meadow	Isolated	
52	Fresh (Wet) Meadow	Isolated	
63	Shallow Marsh	Isolated	Manmade excavation
72	Hardwood Swamp	Isolated	Manmade swale between berm and dirt road
73	Shrub-Carr	Isolated	Basin in old railyard area, surrounded by roads/trails
74	Shrub-Carr	Isolated	Basin in old railyard area, surrounded by roads/trails
75	Shrub-Carr	Isolated	Basin in old railyard area, surrounded by roads/trails

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